

THE RAILWAY GAZETTE

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INCORPORATING

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GOODS FOR EXPORT

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as indicating that they are available for export

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The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

British Railways in Wartime

ON November 4 Major General N. G. Holmes, Director of Movements, War Office, broadcast a very interesting talk on the work of the British railways in wartime. As a background to his comments, he reminded listeners of the difficulties inherent in providing facilities for the manufacture and storage of all the manifold impedimenta of modern war, concurrently with building up vast armies, navies, and air forces with their camps, dumps, training grounds, aerodromes, naval bases, etc., on such a small platform as the British Isles which covers only 94,000 square miles. Small wonder, he remarked, that movement on such a small platform became very difficult at times! In the course of his talk he divided troop movements into four categories, namely, training, leave, inward movement to, and outward movement from, the British Isles, and commented on the characteristics of each and their reaction on civilian travel. In particular he stressed the fact that the highest priority had to be accorded to outwards overseas movements and that, for many reasons, such movements had frequently to be diverted at very short notice to ports other than those originally planned. This necessarily involved the very closest collaboration between the railways and Movement Control.

Freight Traffic Demands

Turning to freight traffic, he mentioned that the outwards military freight traffic movements alone run into hundreds of thousands of tons each month, all of which must arrive at the ports, not only at the right time, but in the right order to enable the cargo to be stowed in the correct order for discharge and to enable continuity of loading to be secured. Although he naturally refrained from giving details, he instanced the complicated arrangements necessary for sending a British armoured unit to Sicily or Salerno, indicating that the movement of the personnel of one division required 45 special trains, and to move a division complete with vehicles would require 140 special trains. After paying a striking tribute to the successful manner in which British railwaymen had overcome the many difficulties inherent in operation under wartime conditions, he indicated that military demands on the railways had doubled during the last eighteen months and were still increasing, with the result that the coming winter would be the heaviest of the war for the British railways so far as military traffic is concerned.

The Importance of Punctuation

In our issue of November 5, in dealing with the Minister of War Transport's speech in the House of Lords during the recent debate on inland transport, we went to some pains in an endeavour to clear up what seemed to us to be an ambiguous statement. The official report had quoted the Minister as saying that so vital a service as the railways should not be starved of proper maintenance and improvements because of shortage of funds, or of inability to raise new capital, and that this point "could be met by placing the credit of the Government behind the railways by nationalisation, and the same end could also be achieved by creating conditions under which the railways could operate on a reasonable profit margin." Enquiries at the Ministry of War Transport elicited the information that a comma should have been inserted after the word "railways" and before "by nationalisation." We are now informed, however, that this statement arose through a misunderstanding in the Department and that the version as given in Hansard is correct. It would appear, therefore, that Lord Leathers wished to put forward two courses only for dealing with the railways—nationalisation, or the creation of conditions under which the railways could operate on a reasonable profit margin.

Government Policies for Railways

Lord Leathers, in the debate in the House of Lords of October 27, declared that the railways were a national asset and that so vital a service must not be starved of proper maintenance and improvements because of the shortage of funds or the inability to raise new capital. His speech was noteworthy because of this declaration and also for the lines of Government policy which he enunciated to meet the required conditions. Whether, indeed, nationalisation of the railways would necessarily lead to proper provision for maintenance and improvements is highly debatable and would be in part contingent on the current national finances. Lord Leathers added that in deciding on its course the Government would be influenced solely by practical considerations and would seek to obtain the best results with the minimum of dislocation. That would point strongly towards the desirability of implementing the second

policy. It is probable, however, that the future of the railways will be largely contingent on the result of the first General Election after the war. Meantime, speculation must be hypothetical.

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Sir William Wood's Message to L.M.S.R. Employees

In an open letter in *Carry On* to railway workers on his system, Sir William Wood, President of the L.M.S.R., points out that in the coming winter the prospect is that traffic demands will be greater than ever. This autumn the special requirements the railways have had to meet have greatly exceeded all previous figures, and the lines have not yet reached the limit of their capacity, or the limit in the services they have to perform. So far the railways have never failed in their obligations, and Sir William expressed his confidence that they will never do so. He expressed his gratification that notwithstanding the effects of four years of war conditions, with less opportunities for recreation, there had been fewer stoppages of work because of grievances which in present circumstances perhaps rankle more than normally. He asked all the staff to give full priority to the essential job of continuing to keep the railway machine working, as the best contribution to the war effort, and as the best means of helping those in the front line abroad.

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Overseas Railway Traffics

A slight rally in the prices of securities of British-owned railways in Argentina followed the set-back caused by the political situation and there has been some demand for prior charge stocks. Traffics in the 17th and 18th weeks of the financial year have been good on the whole and the gains in these two weeks amounted to £52,212 on the Central Argentine, £39,300 on the Buenos Ayres & Pacific, and £15,420 on the Buenos Ayres Great Southern. The Buenos Ayres Western advance of £4,560 in the 17th week has, unfortunately, been more than set-back by the fall of £12,840 in the 18th week. Antofagasta receipts have been good, and the total from January 1 to October 31 amounts to £1,244,400, an improvement of £305,580. Nitrate Railways have not been so fortunate and the aggregate traffics of £121,639 from January 1 to October 15 show a decrease of £29,232. Great Western of Brazil and Leopoldina continue to show increases, and their aggregate returns to October 30 are respectively £226,800 and £170,763 better.

	No. of week	Weekly traffics £	Inc. or decrease £	Aggregate traffic £	Inc. or decrease £
Buenos Ayres & Pacific*	18th	106,800	+18,900	1,582,200	+52,260
Buenos Ayres Great Southern*	18th	184,980	+13,440	2,608,620	+221,880
Buenos Ayres Western*	18th	48,840	-12,840	875,220	-14,280
Central Argentine*	18th	151,827	+26,792	2,347,479	+167,628
Canadian Pacific	44th	1,692,400	+179,200	48,472,600	+6,487,400

* Pesos converted at 16½ to £

Gross earnings of the Canadian Pacific Railway for the nine months from January 1 to the end of September, 1943, amounted to £43,203,800, an increase of £5,778,400 in comparison with the corresponding period of 1942, and the aggregate net earnings of £6,552,400 showed an improvement of £151,200.

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Railways and the Investor

Mr. W. J. Stevens has contributed an article in *The Financial Times* dealing with the House of Lords debate. He estimates that by the end of this year the profit made by the Treasury from the control of the railways will have reached nearly £125 millions, and he puts in the table to show the financial working of the control agreement for the past three years and his estimates for 1943:—

	Year 1940	Year 1941	Year 1942	Year 1943 (estimated)
Net receipts of railways and L.P.T.B.	42,763,000	65,125,000	89,126,000	100,000,000
Net amount paid to companies by Government	42,763,000	43,469,000	43,469,000	43,469,000
Surplus to Treasury	Nil	21,656,000	45,657,000	56,531,000
Standard revenue	56,900,000	56,900,000	56,900,000	56,900,000

Mr. Stevens feels that Lord Leathers has taken a realistic view which will go a long way to restore railway credit and has done much to remove the uncertainty of the outlook as to British railway investments. It is argued that the outlook for railway junior stocks is probably a good deal less obscure than is the case in many other industries, and Mr. Stevens draws attention to the specific provision made under the control agreement for meeting deferred maintenance and renewals. He thinks that the success of all plans of reconstruction and development will be facilitated by an early settlement of the transport problem, and that it would not be in the national interest that transport should be held up until all the other planning is complete because it is the key to all industries.

A New Currency Unit in Paraguay

Another of the South American States has decided to establish a new currency unit. It will be recalled that, as was reported in our November 6, 1942, issue, towards the end of last year Brazil replaced the milreis by the cruzeiro. Now Paraguay, by a monetary law effective from November 4, has established a unit styled the "guarani" (plural "guaranies"), divided into 100 fractions denominated centimos. The guarani will be symbolised by "G" which will replace the present peso sign "\$." The guarani will replace the Paraguayan "peso fuerte" (the only legal currency in the country at present) at the rate of 1 guarani per 100 pesos (so that 1 "peso fuerte" will be equivalent to 1 centimo), as well as the "peso oro sellado" (the gold peso or nominal bookkeeping unit) at the rate of 1.75 guaranies per 1 gold peso. All holders of notes and coins of the present issue must change them before January 1, 1946. The eight selling rate of sterling exchange in Asuncion on September 1, was 1,239.70 Paraguayan pesos per £, on which basis the quotation for the new currency would be approximately 12.40 guaranies per £.

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Shipping Fully-Erected Locomotives

In view of the important place which British-built locomotives are expected to resume in exports after the war, the construction, at the present time, of a number of vessels capable of transporting cargoes of this type is of unusual interest. It has been possible since 1927 to ship fully erected locomotives from British ports on ships specially built or adapted to handle this class of cargo. Companies like the "Clan" and "City" Lines have suitable ships for this purpose, although those best known, and hitherto most commonly used, have been the "Belships" owned by Christen Smith of Oslo. As a result of British wartime enterprise and the equipping of many classes of ships with more heavy lifting gear than shipowners as a whole have found it necessary to instal for their normal trade requirements, however, the British locomotive building industry after the war should be able to avail itself of the services of home-produced tonnage, which should be of material assistance to it in supplying overseas markets. Some details relating to the shipping of fully-erected locomotives are given in an article on page 483.

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Transport Coinage in Budapest

On August 9, special tram and bus coins, obtainable at tobacconists and the termini of the routes, began to be issued in Budapest, because of the substantial increase in fares from that date, involving amounts not readily payable by the ordinary coinage. The use of these transport tokens facilitates the sale of tickets, as it obviates the necessity of changing money, and enables the conductors to make only one movement instead of the six which are said to be required when payment is made with ordinary coins. In order to popularise the use of "tram money," special rebates have been introduced. Thus, the 50 fillér transfer ticket costs only 40 fillér when paid for with a 40 fillér tram coin. As examples of the increases in fares, it may be recorded that fares have risen from 20 to 30 fillér, and from 34 to 40 fillér. The minimum bus fare is now 30 instead of 28 fillér, and the maximum fare has been increased from 90 fillér to one pengő and 10 fillér. A combined tram and bus ticket now costs 80 fillér (formerly 64), and a day ticket (tram and bus) costs 4 instead of 3 pengő. Simultaneously, the cheap 20-fillér fare for short tram sections was abolished. The necessity for increasing the tram and bus fares is stated to have arisen from the substantial increase in wages and salaries granted at the end of June last; the total increase is said to amount to Pengő 29,000,000.

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Electric Traction in the Mont Cenis Tunnel

The Mont Cenis Tunnel—often, on the Continent, called the Fréjus Tunnel—lies on the main route from south-eastern France to north-western Italy and connects the former P.L.M. Railway system with the Italian State Railways. Suggestions for working the tunnel section electrically were made some time before the last war. It had been recognised when the Simplon route was being completed that electric traction would have to be adopted sooner or later in all the Alpine tunnels, its advantages in such circumstances being so obvious. Plans were eventually made for electrifying on the low-frequency a.c. three-phase system, much favoured in Italy, the line from Modane (the French frontier station), through the tunnel to Bardonecchia (the Italian frontier station), and on to Bussoleno, on the main line to Turin. Electric trains began running over the northern part of the route on the Italian side, between Bardonecchia and Salbertrand, in July, 1912, and from the latter place to Bussoleno

leno in May, 1913. Some time was involved in coming to terms with the P.L.M. authorities about extending the electric working through the tunnel but this was effected, we find, in May, 1915. This date, which we have traced as a result of much research, confirms the footnote, based on information supplied by a Swiss correspondent, which we appended to the Letter to the Editor from our correspondent, Mr. H. V. Borley, published in our October 29 issue.

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Eliminating Superfluous Rail Sections

The standardisation in 1906 of rail sections in Great Britain had a remarkable effect in reducing the many and diverse profiles then in use by different railways to the four bullhead sections which are now used almost exclusively—100, 95, 90, and 85 lb. per yd. Of these, rolling is confined mainly to the 95 and 85 lb. sections, and the advantage in securing both interchangeability and rolling mill economy needs no stress. In the United States the standardisation that has been carried out by the American Railway Engineering Association has been of great value, and the 131, 112, and 100 lb. per yd. A.R.E.A. sections are widely used, but at the same time various lines still have special sections of their own in use, such as the Pennsylvania 152 lb., the New York Central 115 lb., and others. A committee formed at the suggestion of the Office of Defense Transportation, to go into this matter, has found that a total of 61 different sections is still being rolled, and in order to simplify the work of the rolling mills, has recommended a considerable reduction in their number. If the recommendations go through, 9 widely used sections—131, 112, 100 (three), 90, 85, 80, and 75 lb. flat-bottom—will be rolled without restriction; 27 others, each of which is in use by more than one company, will be rolled when sufficient orders are on hand to justify the putting through of a rolling on an adequate scale; and 25 sections will be eliminated. The 27 sections for limited rolling will, for convenience, be concentrated on two or three rolling mills only.

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Power Calculations

Animated discussion was provoked at a recent meeting of the Institution of Locomotive Engineers, by Mr. E. C. Poultney's paper on "Locomotive Power." The author's assumption that boiler evaporation was dependent only on grate area, was challenged on the ground that restricted tube area, insufficient firebox volume, and other imperfections invalidated such an assumption. The author, however, had in mind well-proportioned boilers and what he claimed is reasonably true for properly designed boilers of different sizes. To forecast the power of a bad engine would not be attempted by anyone because the endeavour is always to design good ones. Other speakers in the discussion seemed to assume that the paper was on the determination of maximum performance but no attempt was made to estimate this; instead a forecast of performance was given for definite, and quite moderate, firing rates. One important assumption, namely, that underlying the formula for cylinder m.e.p., was not discussed at all, yet it is of interest to note that the results given by this formula differ hardly at all from those given by the formula of D. K. Clark, which was first published nearly 100 years ago. Used with up-to-date experimental constants by engineers who appreciate its limitations, Mr. Poultney's method would probably enable rapid and fairly accurate estimates to be made of locomotive power, but it was never intended to be treated as anything more than empirical.

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Cylinder Back Pressure

An old tag has it that a little knowledge is a dangerous thing; several times in these columns we have had occasion to point out the folly of consistently adhering to the recommendations of thermodynamic theory in driving locomotives. From time to time the zealous theorist tries to break drivers of the "bad" habit of running at speed with a partly-opened regulator; he wants it full out all the time and expects drivers to control power output by varying cut-off. During a recent discussion at the Institute of Locomotive Engineers one speaker told the tale of an engine class that was consistently driven with partly-closed regulator and retarded cut off. Drivers were repeatedly rebuked for withdrawing the steam but they persisted in the practice. Finally, it was decided to take indicator diagrams to prove that the driving could be bettered; great was the chagrin of the theorists to discover that with full-open regulator and early cut-off these engines, with only 170 lb. per sq. in. pressure in the boiler, were developing, due to compression in the cylinders, a back pressure of well over 200 lb. per sq. in. The moral of the story is that one must not legislate for old-type engines as though they had long-lap long-travel valves and all the other modern refinements.

Industry and the Future

IN the early post-war years, given wise leadership and good judgment, British industry will be able to offer steady employment to a maximum number of persons and it is therefore incumbent on industrialists to apply their minds with confidence to the re-establishment of industries on a normal basis as soon as possible after the war. That is the considered view of Sir George Nelson, President of the Federation of British Industries, some points from whose speech at a recent meeting in Manchester were dealt with in our last issue. That speech was noteworthy for the manner in which it touched on a number of the principal questions which are exercising the minds of many in this country today.

Particular interest perhaps will attach to the broad conclusion which, after careful thought, Sir George Nelson has reached as to the probable post-war commercial relations between the United States and this country. During the first few years after the war the industries of both countries could be fully occupied in meeting the needs of their own peoples, but it will also be necessary to cope with other problems. Great Britain will have to provide exports with which to pay for essential imports and an urgent task will lie before both Great Britain and the United States in supplying devastated areas. As home demands in both instances will obviously be great, export needs will have to be fixed by agreement between the two countries. Sir George Nelson is convinced that from this will come an understanding on the question of developing world trade which will result in agreement between the United States, Great Britain, and Russia to encourage their home trade and to facilitate world trade.

Because of a pent up demand and continued limitation of supplies it will probably be necessary to maintain control of prices and also rationing to counter the threat of inflation, but these controls should be on a diminishing scale, dependent on the rate at which supplies are built up. There will be widespread support for the view that controls and rationing should be brought to an end and trade operated normally as early as possible. Rationing and price control should be designed to prevent the creation of productive capacity in excess of normal requirements during the period of demobilisation.

On the ultimate place of private enterprise in the future organisation of industry he was convinced that private enterprise could and would play the greatest possible part if those responsible for its direction justified themselves by their actions and by the results achieved. Private enterprise did and could continue to serve the public better and at lower cost than nationalised industry. Speaking with a wide knowledge of industry, small and large, and with the exhausting experience during the war of the frustration of individual initiative involved in the vast cumbersome system of government control, Sir George Nelson said he was convinced that if industry were to be nationalised we should become a second-class nation and our workpeople would not be able to retain their present standard of living. Nationalisation would mean the gearing of industry to the State machine and its speed would be that of the slowest unit. There was not virtue in the nationalised institution if it meant that the public paid more for the same product than it would if that product were made by private enterprise. Profit was only a very small percentage of the selling price at the factory but it was also a measure of efficiency in a competitive market. With taxation at its present level, at least half and often more of the results arising from efficiency, enterprise, and initiative of the management and the skill and energy of the workpeople went to the State. No new trade or industry owes its origin to the State and State control does not have to pass efficiency tests. Such mistakes as have been made by private enterprise have been nothing like as costly, as Sir George Nelson pointed out, as those of statesmen and government departments. The aim of private enterprise is to get the job done and to supply a need, and the prerequisite to earning a profit is payment for results. On the other hand the object of the Civil Servant is to avoid censure.

Speaking on the organisation of industry, Sir George Nelson expressed the view that each organ of industry should possess an efficient trade association to deal with its own domestic concerns. For the consideration of matters affecting the industry as a whole these organisations should co-operate either by establishing a joint committee or some other form of organisation which would enable the whole industry to express its views. He was not interested in any cartel, but he held that if we were to achieve security from aggression there would have to be some measure of cartelisation for fundamental reasons, one of which was that no country should be permitted to live in prosperity at the expense of unemployment in another. In the second place efforts should be made to ensure that capital and manufacturing capacity were not created merely in excess of world

needs but realise that cartelisation should not be applied to all types of industry and he did not overlook the fact that the small and medium sized units had played a great part in our industrial development and must continue to play their proper rôle in our industrial structure of the future.

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The Scope and Interpretation of General Railway Statistics

IN 1911 *The Railway Gazette* published a useful book* on railway operating statistics written by Mr. C. P. Mossop, of the North Eastern Railway. Its appearance was opportune, as the passing of the Railway Companies (Accounts & Returns) Act in the same year emphasised the need for the study of operating results. Mr. Mossop told his readers that statistics, however perfect, would not in themselves run a railway, effect reforms, or secure efficiency, but would help in elucidating problems and in drawing conclusions. In handling the figures for his own line, he never lost sight of their general nature. He scrutinised them with the object of ascertaining trends or tendencies and bringing to light matters which called for factual inquiry. When the Traffic Statistics Office was first established at York, Mr. Mossop often had to explain elementary points about the interpretation of his tables. If, for example, "freight-train miles per train-engine hour" over a period were ten, it did not follow that every freight train crawled along at a low speed. The statistic was merely a gauge of freight movement as a whole, taking into account all classes of trains and delays to train engines from any and every cause; it did not give a clue to the working of a particular train. Conversely, one series of good results under special conditions was no criterion of the general statistic covering all operations in a variety of circumstances. The over-all figure was as a rule low in comparison with the peak and its improvement was a slow and gradual process.

The North Eastern Railway spent twenty years of constant effort in advancing its freight-train load from 81 tons in 1902 to 138 tons just before amalgamation. This improvement was obtained in an epoch when railwaymen everywhere were thinking on fresh lines and old-fashioned operating methods were being scrapped. The final figure was not spectacular but was higher than the all-company train load of 125 tons for 1938. It is also worth noting that the North Eastern net train load represented no more than 34½ per cent. of the average gross load hauled by its locomotives in spite of the extensive use of wagons of high capacity in the company's territory where mineral and heavy merchandise traffics always have predominated.

Being aware of the history of the railway companies' endeavours to increase the freight train load, we were surprised to read the letter from Mr. Frederick Smith which appeared in our issue of October 15, under the heading of "A National Transport Programme." Mr. Smith said emphatically that the average train load could be brought up to 500 tons and transhipment, shunting and marshalling practically eliminated by using road vehicles to feed main-line trains.† Elsewhere, he has enlarged on the same topic, claiming that present methods of railway working could be replaced easily by a scientific system of operation which would yield immense economies. It is not clear whether the new "system" involves the closing of branch lines on a wholesale scale or is merely a development of the "railheads" from which the companies distribute goods by road in many parts of the country. We are quite willing to suspend judgment on the fundamental idea until Mr. Smith gives definite shape to his scheme by taking a particular district and indicating precisely how his "system" would be applied there. In the meantime there is a risk of his assertions being accepted in some quarters as established facts and we do not think it will be unfair to criticise his statistical forecasts. In our comments the figures refer to 1938, the year before Government control came into force.

After assuming that the average net freight-train load can be raised to 500 tons by concentrating traffic on main lines, Mr. Smith believes that the 500-ton trains can be run at an average speed of 30 m.p.h. By simple multiplication "average net ton-

miles per train-engine-hour" become 15,000 instead of 968 actually worked. The calculation ignores the fact that only heavy freight engines can handle a 500-ton net load and that, with such a weight behind the tender, 30 m.p.h. would be a maximum rather than an average speed. Occasional delays are inevitable to make way for passenger or braked freight trains, and a lot of time is spent in stopping and starting a string of 50 or 60 wagons. Also, a gradient slows down a freight train sharply. The "austerity" locomotive, designed by the Ministry of Supply, has a tractive effort of over 34,000 lb. and, with eight-coupled wheels and a weight of 128 tons, has good adhesive properties. It is doing excellent work, but we have not observed that it takes the gradients common on our Northern lines more readily than other engines of similar type. All the 2-8-0's have coupled wheels, varying from 4 ft. 8 in. to 4 ft. 9 in. in diameter. They are not intended for fast running, but for shifting heavy loads.

As bearing on the question of combining the load and speed factors, let us look at the working of the "convoy" coal trains, each of which carries a net load of 500 tons. These trains were in some respects the train operator's ideal, because they took heavy through loads, but they had to be stopped at intervals for inspection. Some wagons were unable to stand the strain of the unusually long hauls and had to be shunted out. Experience showed that over a stretch of main line seven goods trains at least could be worked in the time required to pass five "convoy" trains. Further, as soon as the "convoy" trains had to ascend a sharp incline they had either to be reduced in size or aided by a second engine; in either case the net ton-miles fell abruptly for each engine hour. Possibly the average speed of the convoy trains is about 15 m.p.h. and they move faster than ordinary mineral trains will do in peacetime when there will again be an intensive passenger service. Two coaching train miles will no doubt be run once more for every freight train mile.

Perhaps enough has been said to show why "freight train-miles per train-engine-hour" were no higher than 9.15 before the war. We may hope for a moderate improvement on that result by reason of additional facilities provided during the past four years. In turn "the average net ton-miles per train-engine-hour" may be increased, but we should remember that the railways are threatened with a decline in coal forwardings, especially in coal for shipment yielding big train loads, and nobody dare prophesy how other heavy traffics will rise or fall. Whatever may happen we do not see any prospect of this measure of railway work done being improved fifteen-fold, as Mr. Smith suggests, by an adjustment in operating arrangements which could affect only a small proportion of the total freight traffic.

A glance at American statistics may help to show how the land lies. The measure of service performed in one hour by the average American train was 12,473 net ton-miles. To reach this remarkable level the average tractive power of American locomotives of all classes had gradually been raised to nearly 50,000 lb. One of the colossal engines used by the Union Pacific Railroad was illustrated in our October 22 issue. Its tractive effort at 96,650 lb. is more than two-and-a-half times the figure for our "austerity" engine and its adhesive weight is more than the total weight of the British engine and tender. Our picture conveys the impression that the Union Pacific machine has enough power to play with its load of 31 wagons even if each wagon contained 30 or 40 tons of freight. On all the American lines the average size of a freight train was 47 wagons, holding 759 tons, and it travelled at an average speed of 17 m.p.h.

Some of the U.S.A. statistics are compiled on a basis varying in details from the rules followed in preparing our returns, but any differences are too slight to impair the general deduction that the railways operated efficiently in traffic conditions which do not exist here. We cannot hope to equal the records of a country where the average ton of freight was conveyed 207 miles. The American freight train has been likened to a steamship setting out with a large cargo for a distant port. In comparison our goods train is a local distributor and a haul of 60 miles is above the average length.

We remember how Mr. Mossop used to demonstrate by examples that impressions formed about traffic movements were generally wide of the mark when they were examined in the light of appropriate statistics, secured, if need be, by practical tests. In the course of his early training on the North Eastern the late Mr. Frank Pick learned that lesson and profited by it when he came to deal with London's transport problems: he clinched many an argument by remarking quietly that he had the actual figures. We are sorry that Mr. Frederick Smith has not proceeded on the same sound principle instead of seeking to justify his scheme by holding forth hopes of phenomenal changes in general railway statistics which, from their nature, cannot advance by leaps and bounds.

* "Railway Operating Statistics," by C. P. Mossop. Revised by F. H. Graveson, *The Railway Gazette*, 33, Tothill Street, S.W.1. Price 4s.

† Mr. Frederick Smith in his letter stated:—

"What the steam locomotive running on rails can do, and what it actually does, are vastly different things. The average train load can be brought up to 500 tons, and transhipment, shunting, and marshalling practically eliminated, by using the steam locomotive and the train to haul heavy loads at high speeds with few men, and by feeding those trains by the road vehicle, instead of the train."

Alternatives to the Wooden Railway Sleeper

THE experiences of British railways during and after the 1914-19 war and again during the present conflict have made clear their dependence on the importation of large supplies of timber so long as this material is considered as the most suitable for railway sleepers, and the fact that the two decades which elapsed between the last and present world wars failed to produce an accepted alternative may be construed by some as an indication that no change of practice is considered desirable.

When alternative materials are envisaged, steel and reinforced concrete naturally claim first attention and although experiments have been conducted with both over many years there is little doubt that up to now steel has been considered the more likely proposition. During the period of industrial depression after the last war serious consideration was given to the possibilities of the use of steel sleepers on a large scale but because of lack of experience it was not unnatural to expect the railway companies to require a period of test under actual track conditions in this country before embarking on any wholesale change of this nature and it was realised that many years would have to elapse before the suitability, or otherwise, of steel sleepers could be reasonably adjudged.

Although all railways laid down limited mileages of steel-sleeper track, by far the largest use was made by the Great Western Railway, which during the eight years from and including 1929 laid in over half-a-million steel sleepers under all types of service conditions. Of those 98 per cent. were the G.K.N. patent composite type consisting of an inverted mild-steel trough section with c.i. chairs cast in position by means of snugs passing through holes in the sleeper plate. We understand that about 95 per cent. of these sleepers are still in the road. Experience to date has shown that the ultimate main-line life of steel sleepers is likely to vary considerably, depending on local conditions, traffic density, etc. On one railway the principal reason rendering removal of some steel sleepers necessary after only 13 to 14 years' life was excessive corrosion, which resulted in general weakness of the sleeper plate. Many developed serious cracks, and noticeable deformation of the trough section immediately under the rails.

An article in our October 15 issue gave some details of the Southern Railway's experience with two other types of steel sleepers, namely, the Sandberg and the United Steel Companies' Type 2-A; the latter design embodies welded-on steel chairs. In the case of the Sandberg sleeper the average loss of weight after 14 years' life is stated to amount to $8\frac{1}{2}$ lb., which is equivalent to 5 per cent. of the original weight. Allowing for a slightly increased rate of loss near the end of its life and assuming 25 per cent. loss of weight as the maximum allowable, the average total life this sleeper might be expected to give would therefore be something like 50 years. This pre-supposes the loss of weight to be distributed evenly over the sleeper, but experience on other railways has indicated that under certain conditions corrosion (and, of course, mechanical wear) tends to become localised to such an extent that failure is liable to occur long before it might otherwise be expected. In instances of this kind the useful life of steel sleepers undoubtedly falls far short of that previously obtained in the same situation from well-grown creosoted Baltic redwood sleepers which in the past could be relied on to give at least 20 years' main-line service before being relegated to branch lines or sidings where they gave many additional years' life. If the manufacture of steel sleepers were attempted on a scale comparable with the pre-war consumption of wooden sleepers it is probable that first costs would be equalised or even tend in favour of steel, but the economic aspect of the matter would still depend on the ultimate life and residual value of the steel sleeper, reliable data concerning which will not be available to the railways for some years.

The article in our October 15 issue also gave some details of Southern Railway experiences in the field of concrete sleepers and blocks. Apart from small-scale trials during the last war there has been little practical experience in this country of the extensive use of concrete sleepers, due, no doubt, to the failures encountered in the earlier trials and the comparatively high cost and greater weight of concrete sleepers; the latter are generally not less than $2\frac{1}{2}$ times the weight of a wooden sleeper.

Before 1940 some progress in the manufacture of concrete sleepers had been made on the Continent, but except in a few instances their use appears to have been confined to light railways and private sidings. Today, however, home railways are making considerable use of concrete blocks for siding tracks

and have under observation several test lengths of main-line track laid on transverse concrete sleepers of various types. In one instance the site of these tests is also being utilised for investigations into the stresses and strains to which sleepers are subjected under different conditions of loading. At present the concrete sleeper shares with the steel sleeper the disadvantage of being unusable in track-circuited lines but this difficulty would doubtless be overcome if concrete sleepers were otherwise found to be satisfactory.

Consideration of all the relevant facts in conjunction with somewhat problematical assumptions as to the ultimate life of steel and reinforced concrete sleepers leads to the view that although either or both materials may at some future date supersede wooden sleepers, the latter are not likely to be lightly discarded after the war so long as ample supplies are readily available. It is, of course, possible that considerations of political economy might dictate the more extensive use of steel, other than rails, for track purposes, in which event the use of an alloy or copper-bearing steel might well receive further consideration as a means of delaying corrosion and prolonging the life of steel sleepers under normal conditions.

When comparing steel sleepers with those manufactured in reinforced concrete due consideration must be given to the residual values of the two articles, for whereas a steel sleeper, however badly corroded on removal from the track, would appear always to have some value as steel scrap, it is difficult to credit a few pieces of broken concrete with the possession of any value whatever excepting possibly a nominal one if the material is considered in the nature of hard-filling.

Railway Priority Control in India

THE rapidly increasing volume of war and other essential traffic on Indian railways, referred to from time to time in our pages, lately has reached the stage where it was impossible to operate efficiently under the old system, in which numerous officers, both military and civil, were authorised to issue priority certificates. Consequently, the Government of India decided to focus all priorities on five Regional Controllers of Railway Priorities, each solely responsible for issuing orders for priority and priority certificates for movements within and from his region. This new system insures that movements of goods of highest urgency are given first priority, and that unnecessary movements are obviated.

The system came into force on August 1, and the five regions are known as Calcutta North, Calcutta West, Bombay, Madras, and Lahore; there is in addition a Deputy Controller, under Calcutta, stationed at Cawnpore, the great textile centre in the Central Provinces. Each Controller is assisted by an Advisory Panel, including in its membership representatives of the Army, of those Departments of the Central Government mainly concerned with rail transport, of Provincial Governments; of Provincial Transport Boards, and of the railways and other transport concerns in the region. Except in that the Provincial Transport Boards tender advice directly to the Regional Controllers, and not, as hitherto, to the railways, they are continuing to function as before. Requests for priority on Government account, however, are made through the appropriate member of the panel, who, in turn, decides the order in which applications made by him to the Controller should be granted and advises him accordingly. It is then for the Controller to consider all requests from various members of his panel, weigh up their urgencies, and fix the priorities accordingly.

At the same time, the railways have instructions to meet all reasonable demands, referring to the appropriate Controller only those cases in which they find themselves unable to move the consignment within a reasonable time. Contractors working for Government Departments are directed to apply for priorities through those Departments, who then approach the Controller through their representatives on the panel. Instructions to all concerned require that full particulars of each consignment be clearly stated, as also reasons for the necessity of its movement by rail. They also have to convince the Controller that no substitute is obtainable nearer at hand, and that no alternative means of transport is available.

As is probably the case elsewhere also, one of the most experienced officers on the North Western Railway, Mr. W. T. Biscoe, has been selected as Controller at Lahore. Though as yet there has been hardly time for reports on the efficacy of the new system to reach this country, it is confidently expected that a great improvement in movements of first priority consignments will be effected by it throughout India, the great wartime arsenal of the East.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

"Glories of the Past"

3, Kensington Palace Gardens,
London, W.8. November 2

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—It may interest Mr. G. A. Sekon to know that the passenger rolling stock in the Isle of Wight is composed mainly of L.C. & D.R. bogie vehicles.

The teak bodies, of course, are painted green.

P. M. BROOKE-HITCHING

Railways and Railways

Essex House, Essex Street,
Strand, W.C.2. October 28

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—An early reference to the railway made by Sir Humphrey Mackworth in 1695 at Neath, on which he used sail-power (see *THE RAILWAY GAZETTE* of July 23, 1943, p. 285), is given in "The Whole Art of Husbandry; or the Way of Managing or Improving of Land," by "J. Mortimer, Esq., F.R.S." ("Second Edition corrected," 1708, p. 285). Mr. John Mortimer (1656?-1736) there says:—

"I shall not here mention any thing of the Sailing Waggon, and several other contrivances of that kind, till I find them brought to greater Perfection, only one ingenious Contrivance I have heard of, of a Gentleman in Wales, who having a Coal-pit near the Sea, from which to the Water-Side is a plain descent all the way, he loads his Coals in Waggon, for the Wheels of which he hath made Grooves or Channels to run in, by which means, and the having of Sails for them, they tell me, that the Wind carries them loaded to his Wharf, and that being unloaded one Horse draws them up the Hill again."

It is stated in the "Dictionary of National Biography" that the first edition of this book was published in 1707, and that it "forms a landmark in English agricultural literature and largely influenced husbandry in the 18th century."

Yours faithfully,

KENNETH BROWN

U.S. Locomotives in Great Britain

21, Briarfield Road, Tyseley,
Birmingham. September 26

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Mention of the American 2-6-0 engines which ran in England in 1899-1900 in a recent issue of *The Railway Gazette* was very interesting. I have just come across a copy of *The Railway Magazine* for June, 1899, in which these engines are described and illustrated. It appears they did not find much favour on their arrival in England, for on describing them the magazine says:—

"They have arrived at last, the ungainly assemblages of iron that will do duty on the Midland Railway as a goods locomotive. Being an adaptation of American principles of construction to meet the exigencies of an English railway that awoke one day to find it was urgently in need of additional locomotives, it is not surprising that in No. 2501, and her sisters are reproduced the worst features of home and American design. It is claimed that with the American type of locomotive both larger cylinders and increased heating surfaces can be obtained, but neither of these essentials has been taken advantage of in the design. The English buffers and other fittings were sent from Derby to the Baldwin Locomotive Works at Philadelphia, and there fitted. So far as appearances go, no comparison can be made between the neat engines designed by Mr. Johnson and the uncouth machine 'made in America.'"

The description of the engines after all the principal dimensions

have been given concludes with this remarkable and amusing paragraph:—

"It will be observed that the makers describe the engine as a 'Mogul,' an Americanism which can in this case be freely (and appositely) translated 'Mongrel,' which aptly describes these engines."

However, I do not think they were quite so bad as that, and whilst their external appearance did not excite any great admiration, the Midland Railway certainly put them to some good use, and they did good work on the heavy coal and excursion traffic of the line for a number of years. Fifty engines were built for the M.R. in a comparatively short time, and the first engine of the batch, No. 2501, was Baldwin 16,622nd locomotive (built in 1899). It may be interesting to record here that the United States "S.160" class 2-8-0 Army locomotives built by Baldwin in 1942-43, and now at work in England carry makers' numbers in the 80,000 series.

In 1899-1900 Baldwins supplied another 30 2-6-0s; the Great Northern had 20 and the Great Central Railway 10, making a total of 80 engines shipped to England. The G.N.R. engines delivered during Mr. Ivatt's regime were No. 1181-1190 (Baldwin 16927-36), 1191-1195 (Baldwin 17321-25), and 1196-1200 (Baldwin 17355-59). The engines were delivered in batches of ten; they were shipped over in parts and erected ready for steam at Ardsley. The last engine of the series, however, No. 1200, was sent direct to Paris by the makers to form part of their exhibit in the exposition of 1900, and the locomotive was exhibited alongside Francis Webb's L.N.W.R. 4-cylinder 4-4-0 compound "La France," Crewe No. 4000, built in March, 1900.

At the end of 1915 all the American "Moguls" had disappeared. It has often been said that it was not necessary to support the short tender of these engines on two 4-wheel bogies; in conjunction it may be of interest to point out that these tenders possessed less dead weight than the English six-wheel pattern, a result secured mainly by the use of lighter and thinner plates in the construction of the tanks.

Yours faithfully,

A. RICHARDS

Sundial at Liverpool Road Station, Manchester

Bordyke, Burgess Hill,
Sussex. October 19

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The reprint in *The Railway Gazette* of October 15 of a facetious paragraph from *The Manchester Guardian* is welcomed by those of your readers interested in early railway history.

The Manchester Guardian applies the discovery of a sundial dated 1833 to prove that the sun did occasionally shine at Manchester. The most probable explanation of the utility of the sundial in question, I consider, is the following:—

In 1833, and for several years after, each town had its local solar (technically called *apparent*) time. The departure times of trains were based on the local time. Without going into astronomical niceties, the local time of Manchester is about 12 minutes slow of London time, and Liverpool about 4 minutes slow of Manchester. The use of the Liverpool Road sundial, when there was any sunshine (*vide The Manchester Guardian*) probably was to correct the station clock.

A case is reported of a railway company being sued and paying damages for starting a train before time. With local time the practice may not have been infrequent.

A guide to the London & Birmingham Railway contains a table showing the local times at stations—down, slow of London; up, fast of Birmingham.

Yours faithfully,

G. A. SEKON

Publications Received

The Railway Handbook, 1943-1944.
London: The Railway Publishing Co. Ltd.,
33, Tothill Street, Westminster, S.W.1.
8½ in. x 5½ in. 120 pp. Stiff paper covers.
Price 4s. net.—When "The Railway Handbook" was established in 1934, it was designed to provide the railway student with a collection of useful statistics and other information. Some of these statistics, based on official returns, are no longer available during the war, and have been dropped accordingly. Nevertheless, so far as they are available, all statistical tables have been revised up to the latest possible date. For example, the rates of pay of principal grades of British railway staff are corrected up to September 1, 1943. Many sections have again been revised extensively, parti-

cularly those relating to fast schedule runs and aggregate high-speed mileage in the U.S.A. New sections, introduced for the first time in the present edition are those relating to the Railway Companies' Association, railways and war, and "express" traffic in North America.

Training New Entrants to Industrial Work. Obtainable from any office of the Ministry of Labour & National Service.—The issue on request of this manual (P.L. 128/1943) forms one of the facilities made available by the Ministry of Labour & National Service for the training of recruits to industry, details of which are contained in a leaflet (P.L. 125/1943) obtainable from any office of the Ministry. The manual lays down principles applicable to all training, whether the latter be carried out in training sections or "on the job." The

importance is emphasised in either case of planned instruction, and many suggestions are made as to the organisation and execution of training, the choice of instructors, and other matters.

Economy Measures to be Observed in the Use of Lubricating and Industrial Oils.—We have received a 10-page pamphlet from the Ministry of Fuel & Power, which is announced as the first of a series for giving advice to users of lubricating and cutting oils, most of which have to be brought in tankers across the Atlantic, and the bulk of which is required for war purposes. Hints are given under three heads. First of all, there are some suggestions for receiving and storing oil. Secondly, questions of issue and application are dealt with, and lastly, the scope of reconditioning and recovery is discussed.

The Scrap Heap

Three hundred and forty soldiers are being lent as track-repair labourers to the Canadian railways, which, it is stated, are unable to find other employees, and which will pay the soldiers £1 a day each.

KIPLING UP TO DATE

In view of the denial of the rail merger plan involving among others the L.N.E.R. and the G.W.R., a correspondent points out to me that "East is East and West is West, and never the trains shall meet."—"Peterborough" in "The Daily Telegraph"

HOME, SWEET (ROLLING) HOME

A train of eight coaches has been converted into a "hostel" for miners, who thus may be moved from one area to another, to meet labour shortages, without creating housing problems. For 25s. a week each, the miners have the use of a lounge, two dining rooms, two recreation rooms, and sleeping accommodation, with two main meals a day (and three on Sundays). The train is equipped with refrigerators.

The Southern Railway played an important part in carrying this season's harvest of fruit and vegetables from Kent. No less than 115,136 tons was brought to London and provincial markets in more than 33,000 goods wagons and passenger-train vans during the five months from June to October.

At the first meeting of the 123rd session of the Royal Scottish Society of Arts, Mr. C. A. Gibb, Vice-President, spoke on "James Nasmyth, Engineer." He gave an outline of the life and work of Nasmyth, and remarked that the great engineer probably was best known as the inventor of the steam hammer. As a man of 19,

he had been associated closely with the Scottish Society of Arts during his experiments on the application of steam to road transport, carried out at the request of the Society, which had provided the necessary funds. In 1827 his road carriage, accommodating eight passengers, had had numerous successful trials; afterwards, as the invention was not thought to have any commercial value, the carriage had been dismantled, and the parts sold for £67.

INDIAN SALESMANSHIP

Some of the advertisements in overseas railway staff magazines are worth reading. Two examples are quoted below:—

GREY HAIR

Don't use dyes. Use our Ajuurvedic Scented oil and let your grey hairs turn black lasting up to 60 years. Your eyesight will be improved and headache cured. If few hair has turned grey, then buy a phial for Rs. 2, if more, then buy a phial for Rs. 3-8-0, if almost all, then purchase one phial for Rs. 5. Double price will be paid in case of failure.

SMART PERSONS

willing to sell our Lady fancy ornaments of new gold and earn Rs. 100/- to 250/- p.m. in their spare time. One pair bangles, one pair ear-rings one locket and one tola new gold sent as sample. Catalogue and agency terms free.

WHERE TO LIVE

A very fierce argument about London is going on between rival schools of planners. One school thinks Londoners ought to live in flats. The other school insists that Londoners must live in houses. The one man who never seems to be consulted in all this is the Londoner himself. If he could get a word in edgeways he might observe that he detects very few signs of anything at all being built. And he might add that if things go on as they are his difficulty after the war will not be to choose be-

tween a flat or a house but to find anywhere at all to live.—From "The Evening News."

The decelerations in our train services, inevitable both during the last war and the present, appear but trifling inconveniences when compared with what passengers on the Eastern Counties Railway had to

EASTERN COUNTIES RAILWAY COMPANY

OFFERS THE FOLLOWING ADVANTAGES TO

NERVOUS PERSONS.

Trains at REDUCED SPEED to meet their views.

The Rate of Speed is not at all FRIGHTFUL.

For example,—Hertford is 21 miles from London by the road,—the time allowed for the second business train is One Hour and Thirty-five Minutes! (but the journey is not always accomplished in that time.) Again,—Waltham to London was formerly done in Thirty-seven Minutes, the time now allowed is Fifty-eight Minutes.

One of the Officials stated that "The time allowed was so great that they did not know how to kill it!"

Mr. PUNCH says, "The only Fast train on this Line are those that are Stuck Fast." There is plenty of time for quiet reflection.

N.B.—A person offers for a Wager to run his Donkey against the Train for one stage, and have time for his Breakfast in the bargain!!!

The Season Tickets may be 10 or 20 per cent higher than on other Lines, but as the time allowed for making the journey is so liberal on the part of the Company, the Passengers must not complain. Railway Companies cannot afford to waste Time and Steam without being paid for it.

(By Authority)

PASSENGERS.

endure about the year 1860. The accompanying reproduction of an amusing circular of that time gives a few of the details. It was in this circular that the famous wager appeared; it is usually attributed to a costermonger, who offered "to run his Donkey against the Train for one stage and have time for his Breakfast in the bargain."

Members of the Southern Railway Garden & Allotment Show Committee (employees at Eastleigh Works), of which the Honorary Secretary is Mr. Albert Lee, recently organised a very successful garden show, and raised £255, on behalf of the Red Cross. A sum of £115 10s. was given to Mrs. Churchill's Aid-to-Russia Fund, and one of £139 10s. to the Red Cross Agriculture Fund, the Horticulture Committee of which has thanked Mr. Lee and his fellow workers for the amount of work accomplished in making the show a success.

TAILPIECE

(It has been suggested that porters might add a word of welcome when calling out names of stations)

Just the name and nothing more
Chanted at your carriage door.
By a lady porter bold,
How unwelcoming, how cold!

How much nicer if she scorned
Nomenclature unadorned,
Raised instead the voice of joy,
"Clapham Junction—attaboy!"

"Weymouth—this is too divine!"

"Huddersfield—the pleasure's mine!"

"Great and Little Snoring greet you!"

"Here's Hogs Norton—pleased to meet you!"

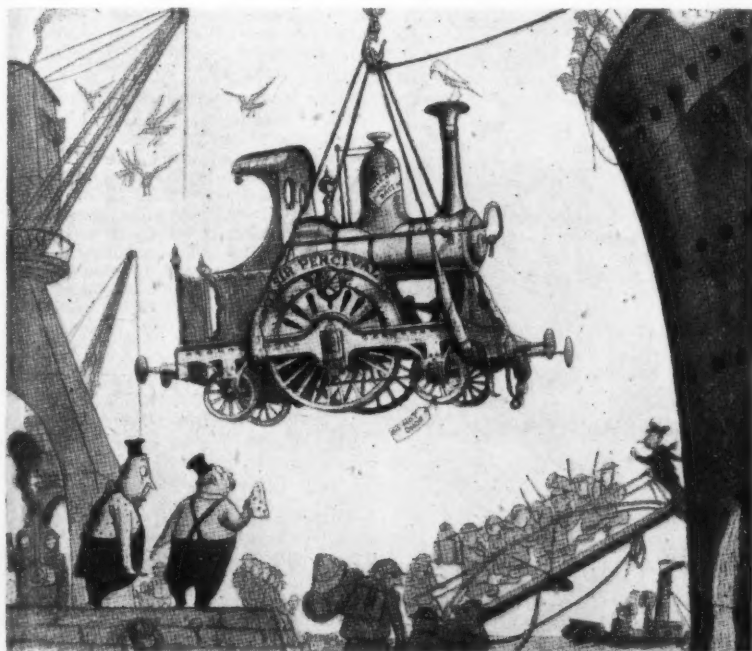
"Sheringham—I hope you'll stay!"

"Worthing—what a perfect day!"

"Southport—are you better now?"

"This is Chichester—and how!"

E. C.



"... and when 'e GETS there I suppose they'll call 'im a Desert Rat"

[Reproduced by permission of the proprietors of "Punch"]

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

UNITED STATES

C.T.C. Records on Missouri Pacific

The world record of mileage equipped for centralised traffic-control is claimed by the Missouri Pacific Railroad, the 415 track miles of which so provided will have been increased to 482 miles early next year, when the Gurdon-Texarkana c.t.c. installation is to be brought into use. The trains of this company then will move by signal indication only over 418 miles from Poplar Bluff, Missouri, across Arkansas and 90 miles into Texas, at Texarkana, and no written train-order working will remain on any part of this route.

The Missouri Pacific Railroad, with its subsidiary, the Texas & Pacific Railroad, will have the equivalent of double track throughout from St. Louis to Longview Junction, Texas, a distance of 583 miles continuously. Between St. Louis and Poplar Bluff, passenger trains use the more direct, but heavily-graded, Missouri Division, and freight trains travel by the double-tracked Illinois Division, at water level throughout, from Dupon via Chester, Thebes, and Dexter Junction. From Poplar Bluff onwards c.t.c. is regarded as equipping single track with double-track operating-possibilities, except for the 79 miles between Bald Knob and Malvern, which are double-tracked. The control machine of the 67-mile Gurdon-Texarkana section, now in course of equipment, will be situated centrally at Hope. It is claimed by the M.P.R. that the world's first remote-control system, precursor of modern centralised traffic-control, was installed by that company, between Leeds and Osawatomie, in 1925.

Joint Working Economy in Wyoming

Approval has been obtained by the Chicago & North Western Railway, under certain conditions, from the Interstate Commerce Commission for the abandonment of 87 miles of its line from Ilco to Shoshoni, Wyoming. It may be recalled that the proposal is to lay in a 900-ft. connection with the parallel track of the Chicago, Burlington & Quincy Railroad at Ilco, and a 3-mile spur from Bonneville, C.B.Q.R., to Shoshoni, C.N.W.R., so that the latter may operate its trains by trackage rights over the Burlington line between these points. A contract has been let for the construction of the necessary connections, which are being financed jointly by the companies concerned, at an estimated cost of \$127,500.

The specified conditions, referred to above, include requirements that any employee whose compensation is reduced by the abandonment shall be paid for four years a monthly displacement-allowance sufficient to make up the loss suffered; that a monthly dismissal-allowance is to be paid to any employee deprived of his employment under the new working arrangement; and that any employee compulsorily moved is to be reimbursed his travelling expenses. The cost of compensation, of course, is to be met by the C.N.W.R.

New Missouri Pacific Locomotives

Among the numerous 4-8-4 locomotives now in course of delivery to American railways are fifteen of this wheel arrangement built by the Baldwin Locomotive Works for the Missouri Pacific Railroad. To facilitate construction, the M.P.R. agreed to accept engines of a type which the same builders had delivered recently to the Denver & Rio Grande Western Railroad, with

certain minor modifications of detail. The new engines, which are numbered from 2201 to 2215, have cylinders 26 in. dia. x 30 in. stroke, cast integrally with the main frames; 6 ft. 1 in. driving wheels; boilers each of 8 ft. 4 in. dia., providing a combined heating surface of 5,318 sq. ft. and a fire-grate area of 106 sq. ft., and pressed to 285 lb. per sq. in.—a record for the M.P.R.; and a tractive effort each of 67,200 lb. The engines themselves weigh each 209 tons in running trim, and the 12-wheel tenders, with 20 tons of coal and 19,350 gal. of water, 158 tons, a total of 367 tons; over engine and tender the total length is 106 ft. Among typically-modern features of equipment are roller bearings throughout, Timken on the engines, and SKF on the tenders; multiple regulator-valves; boiler low-water alarms, standard BK stokers; and internally-lubricated hollow crank-pins and floating bushes. With a Cooper E-64 bridge classification, the new engines may operate over the company's main lines between St. Louis and Pueblo, St. Louis and Little Rock, and Kansas City and Omaha. The first of them are in service on fast freight trains between St. Louis and Kansas City, but the class will be used also in passenger service later.

ARGENTINA

Riachuelo Tunnel Project

A Government committee has been appointed to study, and report on, a scheme submitted by Señor Juan A. Briano, a well-known Argentine engineer, for the construction of a tunnel under the Riachuelo River in the Boca-Avellaneda district, in the south of the city of Buenos Aires. It is claimed that the construction of a tunnel would help to solve the traffic problem, as the existing system of bridges is inadequate to handle with speed and efficiency the heavy volume of vehicular traffic.

The committee will consist of four members, representing the Ministries of Public Works, War, and Marine, and the Buenos Aires municipality, respectively.

State Railways Credits

Under a Decree issued by the Ministry of Public Works, providing for a redistribution of the credits appropriated for construction work on the Argentine State Railways, it is estimated that a saving of some 4,500,000 pesos will be effected. The sum at present appropriated for this purpose is 25,420,000 pesos, and economies effected are due to the cancellation of various schemes, which cannot be carried out for the time being through shortage of materials, or the execution of which would be prolonged unduly.

SWITZERLAND

Val de Travers Railway

The report for 1942 of the Chemin de fer Régional du Val de Travers, which owns and operates the standard-gauge line between Travers (on the Neuchâtel-Pontarlier main line) and Fleurier, with two extensions from Fleurier, to Buttes, and to St. Sulpice, respectively, shows that 828,900 passengers were conveyed (716,700 in 1941), but that goods traffic decreased to 66,800 metric tons from 74,600 metric tons in 1941. Working receipts were fr. 346,171 (against fr. 351,845), and working expendi-

ture rose from fr. 357,211 to fr. 432,758, which sum included fr. 119,800 for fuel, an item which averaged fr. 34,000 a year before the war. The loss on working for 1942 was fr. 86,587, compared with fr. 5,366 in 1941. After allocation had been made to the renewal fund, and other items, and after the debt service in respect of consolidated and floating loans had been provided for, and in spite of the working subsidy of fr. 49,100 (fr. 83,100 in 1941), the profit and loss account closed with an unfavourable balance of fr. 128,593 (fr. 232,329), which, however, has been wiped out by the financial reconstruction carried out in the meantime, but not shown in the 1942 balance sheet. The reconstruction yielded fr. 1,613,237 through reducing the value of the shares of the first and second series from fr. 500 to fr. 5 (a total of fr. 839,670); and through the conversion of the 1924 five per cent. loan of fr. 260,000, and of the 1898 two per cent. loan of fr. 230,000, into preference shares, but of only half the previous nominal value.

SLOVAKIA

State Railways Expenditure

According to recent reports from Slovak sources some 1,422,000,000 kronen has been spent by the Slovak State Railways between March 14, 1939, and June 30, 1943, as follows: 228,500,000 kronen on improvement of existing lines; 63,500,000 kronen on reconstruction work; 181,000,000 kronen on new station-buildings; 10,000,000 kronen on repair-shops; 182,000,000 kronen on new locomotives, railcars, and coaching and goods vehicles; and 757,000,000 kronen on construction of lines.

HUNGARY

Sale of Wagon Works

According to a recent message from Budapest the Unio Wagon Gyar (Union Wagon Works), of Szatmárnémeti, is to be sold by auction. The works belonged to the Roumanian Astra concern, and most of the equipment was transferred to Bucharest and Brashov when the Hungarians occupied north-western Roumania. It is the buildings and the remainder of the plant which are to be sold.

Station Rearrangements at Satu Mare

Alternative schemes are under consideration by the Hungarian State Railways for the reconstruction, or substantial remodeling, of the central passenger station at Satu Mare, about 230 miles by rail east of Budapest. In the meantime, a scheme for the decentralisation of goods working is being carried out. Two goods stations, at Episcopia Bihor (about 3½ miles west of the main station), and at Satu Mare Venetia (about 1½ miles to the east of the town), are to replace the present goods station.

MANCHURIA

Private Railway Difficulties

The privately-owned railways in Manchuria are reported to be experiencing difficulty in maintaining adequate services because of shortages of materials and of facilities for repairs. It is stated that repair work is being carried out on their behalf by repair shops of the South Manchuria Railway.

Air Services

According to a recent declaration of the President of the South Manchuria Railway, air transport between that State and Japan is to be developed to a considerable extent as soon as circumstances permit.

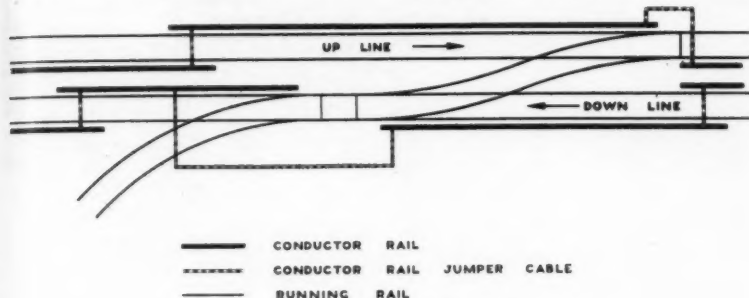
Electric Railway Traction—IV*

Methods of current collection and systems of multiple-unit control

By C. E. Fairburn, M.A., Acting Chief Mechanical Engineer
& Electrical Engineer, L.M.S.R.

ONE of the difficulties of the third-rail system is that the rail cannot be continuous; as far as possible difficult places are bridged by changing the position of the rail from one side of the track to the other with an overlap as shown in the accompanying diagram of a typical

sideration can be given to the train itself. With the third rail and also with the third and fourth rail, collection is by means of a cast-iron or cast-steel shoe, rubbing on the conductor rail. In the same way, with the overhead system, a shoe rubs on the trolley wire and collects



Arrangements of third rail at typical crossover

layout, but complete continuity at crossings, junctions, etc., is not always possible. In consequence there are sometimes gaps of as much as 170 ft. where current cannot be collected and the signalling must, as far as possible, be arranged so that a train is running at speed when coming to these places. With the third- and fourth-rail system the difficulties are obviously still greater.

When intensive traffic has to be operated, it is necessary to have what is called track circuiting in connection with the signalling, and this involves either the exclusive use of one of the running rails or the installation of special apparatus concerned with the signalling. When one of the running rails has been given up for this purpose it has sometimes been necessary to supplement the remaining running rail by a cable so that the return current shall have a return path of sufficiently low resistance. Where third and fourth rails are used both running rails are available for the signalling system and this is one of the determining reasons why the London Underground railways have been standardised on third and fourth rail.

In the early days it was supposed that 600 V. was not dangerous to human life, but this belief has been modified to some extent and now, when the conductor-rail system is used, the Minister of Transport may require fine mesh netting to be put down the sides of the track to keep out human beings and animals. Although a third rail can be employed with a 1,500-V. supply, it has to be protected heavily so that it cannot be touched; for this reason the overhead system is generally accepted for this voltage and it is invariably employed for higher values. The overhead system has no breaks, and so is better for the operation of locomotive-hauled trains, particularly slow-moving freight trains. It is less dangerous and is free from snow, ice, and flood troubles.

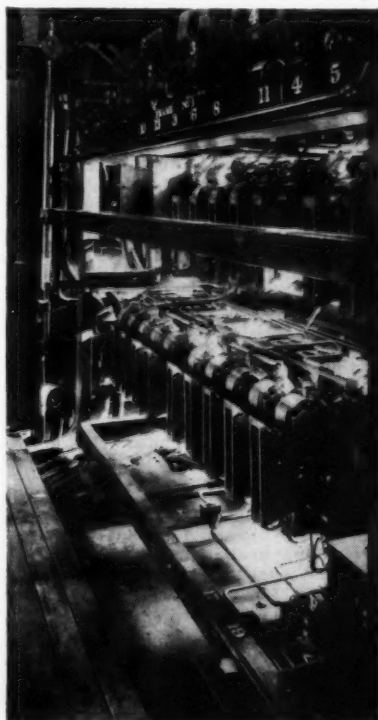
Means have now been described for bringing energy to the train and con-

current. The shoe, however, is lighter and, to allow for differences of level in the overhead wire, it is carried on a spring-supported flexible mounting known as a pantograph. One of the main points in the design of pantographs is to obtain a reasonable rubbing pressure on the overhead conductor and at the same time to make the pantograph respond easily and

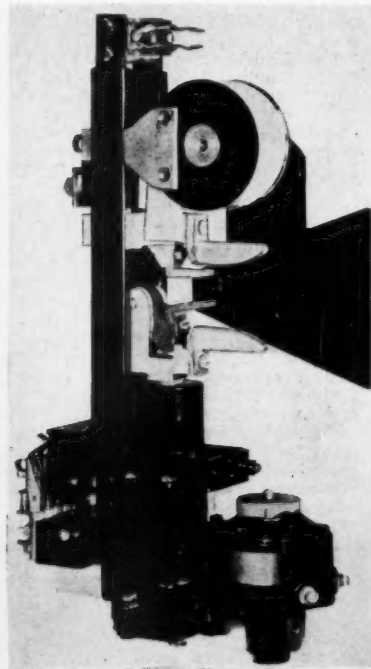
quickly to differences of level of the wire. On trolleybuses and trams, although the apparatus for the collection of current differs in construction, the principle is exactly the same, except that, particularly on trams, a rotating trolley-wheel is often used instead of a sliding shoe.

The first electric vehicles consisted of single cars with self-contained electric equipment to which one or more trailers could be added; this is still common practice on Continental tramways. It soon became obvious that this arrangement was not satisfactory for suburban railway services where high rates of acceleration were necessary and, in 1895, Sprague, an American, designed what became known as the "Sprague multiple-unit control." With this system of control, motors can be installed on as many cars of a train as is desired. Each motor-car has an independent control unit connected through auxiliary wires to a master controller in the motorman's cab, so giving control of all the motors on the train from a single point. Although the principle of this development sounds very simple, actually there were many complications to be overcome and it represented a great step forward.

In the original Sprague multiple-unit control, each of the switches, or contactors as they would now be called, in the various control equipments, was closed magnetically by energising a coil surrounding an iron plunger, the movement of which closed or opened the contacts. Although many contactors of this type are still in use they are somewhat cumbersome, as can be seen in the accompanying illustration of the equipment compartment of an L.M.S.R. coach; they take up a lot of space; consequently alternative designs have been developed. In one of these the contactors are grouped



Contactors in the equipment compartment of an older L.M.S.R. motor coach

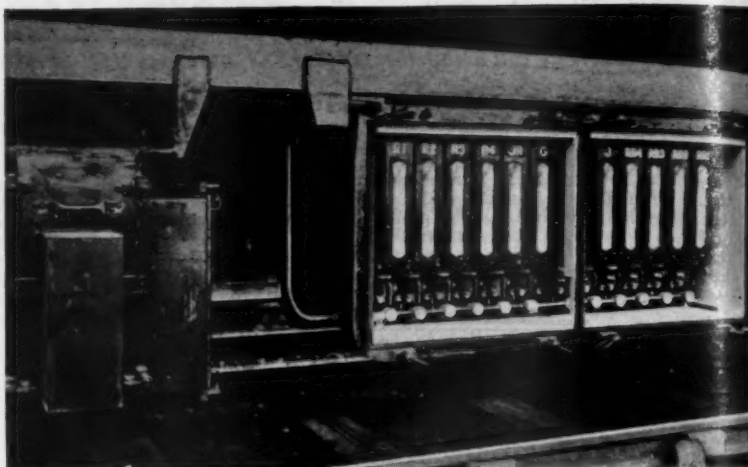


Part sectional view of modern electro-pneumatic contactor

* Abstract from a Faraday Lecture. Part I was published on August 20; Part II on September 17; and Part III on October 15.

together in line and the contacts are closed by cams mounted on a shaft rotated by a small motor or air cylinder. This type, with air operation, is in fairly extensive use, but the type which appears to be most widely adopted today is the electro-pneumatic, shown in part section in the next illustration. Each contactor is a separate unit and the contacts are closed by air pressure acting on a piston, a rod from which actually closes the contacts. Admission of air is controlled by a small electrically operated valve.

Originally the control equipment on motor cars was all housed in the body as shown in the illustration of the L.M.S.R. arrangement; the idea was to make it easily accessible and keep it free from dirt and dust. With modern equipment, however, the reliability is so great that, where space permits, it is now almost invariably hung from the underframe, thus leaving the deck entirely free for passenger accommodation. This is only a very brief description of the essentials of control gear. Actual equipments require in addition various relays and other auxiliary devices which cannot be described here. The last illustration shows a typical modern underframe-



Modern underframe-mounted control equipment for motor car

mounted equipment also on the L.M.S.R.; how closely the contactors can be packed. (To be continued)

Wirral Lines Electrification, L.M.S.R.

Mr. C. E. Fairburn's Paper before the Railway Engineering Division of the Institution of Civil Engineers

ON Tuesday last, Mr. C. E. Fairburn, M.A., M.Inst.C.E., Acting Chief Mechanical Engineer & Electrical Engineer, L.M.S.R., contributed "Railway Paper No. 9" to the Railway Engineering Division of the Institution of Civil Engineers. He took as his subject "The Electrification of the Wirral Lines of the London Midland & Scottish Railway," and dealt fully with the construction and maintenance features and operating experiences of this undertaking, which was described and illustrated in *The Railway Gazette* of March 18, 1938. The electrified Wirral lines are 10.5 route miles in length, and the L.M.S.R. electric trains run through to Liverpool via the Mersey Railway. The standard timing for trains stopping at all stations between West Kirby and Liverpool is 29 minutes. Pre-war the average traffic density over 24 hours was 110 three-car train-miles per hour, and the peak traffic required 300 three-car train-miles per hour. These services are curtailed to some extent at the present time, but during the busy periods there is a train from West Kirby and from New Brighton every 10 minutes, giving a 5-minute service from Birkenhead North to Liverpool Central. At other times, each branch has a 20-minute service.

The energy-consumption guaranteed by the equipment makers, and subsequently established by tests, was 136 kilowatt-hours for a round trip between West Kirby and Liverpool with a timing of 27 minutes; this included sufficient coasting to enable 2½ minutes to be made up in abnormal circumstances and allowed 20-second stops at all stations. It included 6 kilowatt-hours for the energy-consumption of the auxiliaries. The guaranteed balancing speed of the stock when fully loaded was 56 miles per hour.

Coasting-boards had been installed in positions calculated before test results on the stock were available. Subsequently the positions were reconsidered, and in some instances they were resited, with the result that the measured daily maximum 30-minute demand was reduced by about 150-200 kilowatts and the daily energy-consumption by 8 per cent. It is therefore evident that such boards, if the drivers observe them consistently, can make a very definite reduction in energy-consumption.

The estimated annual consumption of energy was 7.01×10^6 kilowatt-hours and the maximum 30-minute demand 2,175 kilowatts. During the first year of operation, while maintaining the original services, the metered figures were 6.84×10^6 kilowatt-hours and 2,200 kilowatts respectively.

The maintenance of the stock has not presented any major difficulties. During the first year of operation 62 service faults occurred, which caused a total delay of 262 minutes. This represented 7.6 faults per 100,000 motor-car miles. In the latest year of operation 20 faults occurred, causing a total delay of 117 minutes, or 2.6 faults per 100,000 motor-car miles. In view of the special change-over gear, air-operated doors, signalling circuits, and electro-pneumatic brake equipment, these figures do not seem unreasonable, but some further improvement may be secured when more favourable conditions return after the war.

The most important factor in restricting running faults is orderly maintenance in the car shed. This comprises a general inspection, mainly of the running gear, approximately every three days, and detailed examinations in which as much work as possible is concentrated at 50-day intervals. Some few items require a

25-day examination, and others need attention only every 100 days or longer.

Of the 19 car sets, 14 are normally required for traffic, one is held as traffic spare, three are available for general maintenance, and cleaning, and the remaining one is available for heavy overhaul at the company's Horwich works.

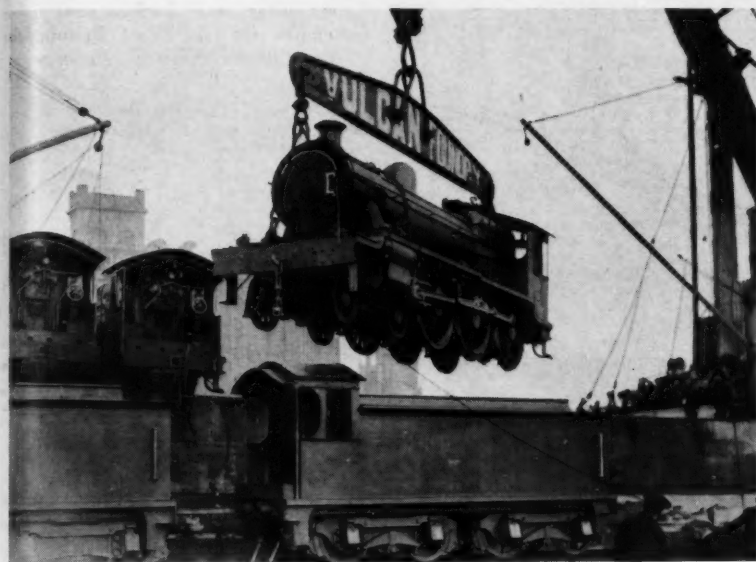
This system, although small, presents every technical problem which has to be met on much larger electrification schemes. In fact, it has introduced certain special points, and it has enabled experience to be obtained on many new features of track, sub-station, and stock equipment. A number of these new features has been adopted subsequently with advantage on other electrified lines of the London Midland & Scottish Railway.

FIRST HUNGARIAN ELECTRIC STREAMLINE LOCOMOTIVE.—Reference was made in our July 23 issue, page 98, to the first Hungarian electric streamline locomotive, in which, it is stated, the Kando change-of-phase system with rod drive has been discarded, and the power of the four motors is transferred direct to the four driving-axes by means of geared wheels. The electrical equipment of the locomotive has been supplied by the Ganz locomotive and wagon building works, of Budapest.

GANZ SHARE CAPITAL INCREASE.—An increase, further to that recorded in our February 5 issue, has been made in the share capital of the Ganz locomotive and wagon building concern, of Budapest. The first increase was from 12,860,000 pengos to 17,150,000 pengos, and the latter figure now has been raised to 21,437,500 pengos, through the issue of 171,500 shares with a nominal value of 25 pengos each, which were offered to existing shareholders at 24 pengos each. In 1942, after depreciation and other items had been provided for, totalling 1,900,000 pengos, the company returned a net profit of about 3,300,000 pengos. Payment of dividend was resumed, at one per cent.; and 840,000 pengos was allocated to reserves, and 2,000,000 pengos to the pensions fund; the balance, of about 380,000 pengos, was carried forward.

Shipping Fully-Erected Locomotives

Some details of facilities and methods used for loading complete vehicles on board ship



IT was announced recently that the first of a series of large and fast cargo ships of a standard design is being completed on the North-East coast. These vessels are designed to answer the demand for ships capable of maintaining a speed of at least 15 knots. They have a dead-weight capacity of 12,000 tons, and thus rank among the largest cargo ships in the world. The hull has been designed so that ships of this type may carry the heaviest cargo, including locomotives, and heavy machinery. The decks have been strengthened to avoid the need for supplementary shoring. The cargo-handling gear is of the electrical type, and the winches are so arranged that they can be coupled to deal with lifts up to 80 tons. In addition, numbers of vessels are also being built with heavier derricks, and no doubt some of these vessels are already in service.

Since 1927 it has been possible to ship fully-erected locomotives from British ports, on ships specially built or adapted to handle this class of cargo. The "Clan" and "City" Lines have ships which are suitable for this purpose, but probably the best known vessels of this type are the "Belships" which, before the war, were owned by Christen Smith

of Oslo. These vessels were built in Great Britain especially for locomotives and other heavy cargoes. They are provided with derricks, each of which is capable of lifting up to 125-130 tons, so that vehicles can be unloaded by the ship at distant ports if no shore or floating crane is available. The need for making provision for lifts of this order is shown by the details given hereunder of locomotives for all overseas railways which have been supplied fully erected.

Chinese National Railways

Weight of engine empty (less tender)	106 tons
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(A typical cargo on a Belship comprised 6 of these engines together with their tenders, 8 other engines and tenders from another British locomotive builder, 27 British-built railway coaches, and 10 Continental-built locomotives and tenders.)

Indian State Railways

Broad-gauge goods engine "XE" class; weight of engine (less tender)	106 tons
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Buenos Ayres Great Southern Railway

"15A" class locomotive. Weight of engine empty (less tender)	81 tons
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The weights given above do not include the special lifting beam, slings, and shackles which add approximately a further 13 tons. These beams, and so forth, are usually available from the locomotive builders, but they have to be carried by the ships if they are to handle cargoes at distant ports. The handling of coaches and railcars, although usually not involving a heavy lift, necessitates provision for ample clearance on the vessel. For example, the bodies of some diesel railcars, built by the Vulcan Foundry Limited for the New Zealand Government Railways in 1939, weighed 17½ tons only, but they were 67 ft. 4 in. long, 8 ft. 9 in. wide, and 11 ft. high.

Electric locomotives are also shipped fully erected; for example, a 1,500-volt all-electric passenger locomotive supplied by the General Electric Co. Ltd., and to which R. & W. Hawthorn Leslie & Co. Ltd. acted as mechanical builder, for the Great Indian Peninsula Railway, was shipped fully erected from Newcastle-on-Tyne in 1928. It weighed 108 tons, was 56 ft. long, 14 ft. high, and 10 ft. wide.

In the accompanying illustrations some details are given of the methods of lifting various types of locomotives and railcars. As an example of the use of front and rear lifting gear an illustration is given of the arrangement of lifting beam, slings, and shackles used in connection with the locomotives and tenders shipped fully erected for the Chinese National Railways.

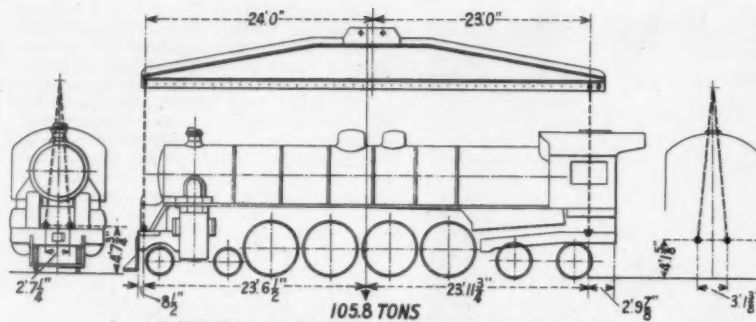
An illustration is also given of the lifting arrangements used for a 4-8-0 "15A" class locomotive for the Buenos Ayres Great Southern Railway. The varying position of the lifting points in the cases of locomotives, tenders, and railcars will be noted.

Because of transport difficulties or insufficient clearance *en route* from works to the docks, it may be necessary to remove certain components before dispatch from works when engines for railways with wider and higher maximum running dimensions than those of the British railways are being transported to the docks by rail. In such instances, the engines are re-assembled on the dock side, steamed and tested, so that they can be put into commission with the minimum of delay when delivered at their port of destination. In recent years a number of locomotives also have been despatched to the docks by road transport on low well wagons; this method requires only a minimum of dismantling.

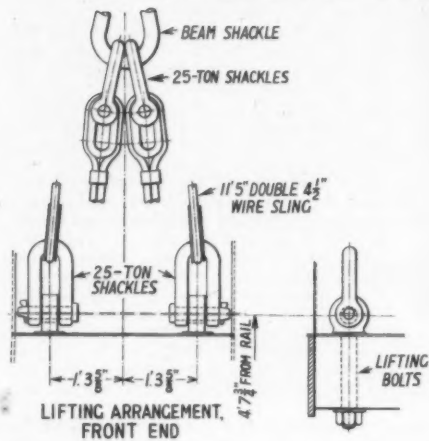
Special care needs to be exercised when loading vehicles on the ship and locomotive builders usually assist shippers by sending an experienced member of their staff to advise where necessary. The locomotives to go in the hold are first lowered through the hatch on to wood skids, built to the correct gauge from the locomotive drawings supplied by the



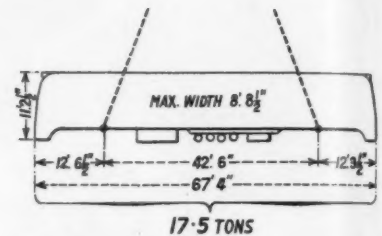
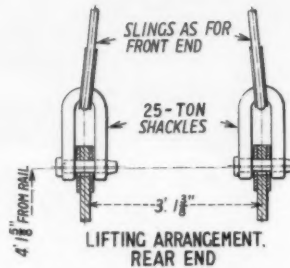
Transporting a locomotive to the docks by means of a low well wagon



Left: Outline arrangement of lifting beam, slings, and shackles used for a locomotive built in Great Britain for the Chinese National Railways

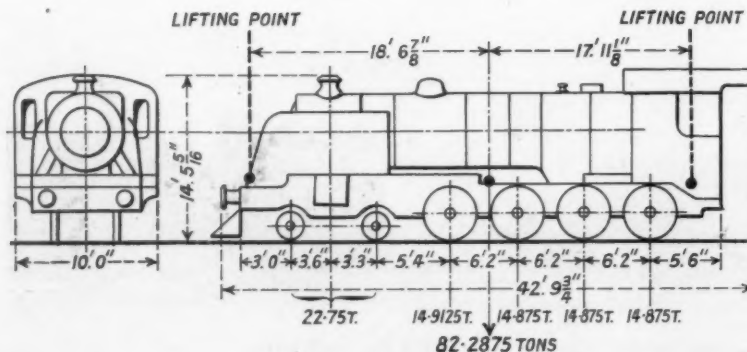
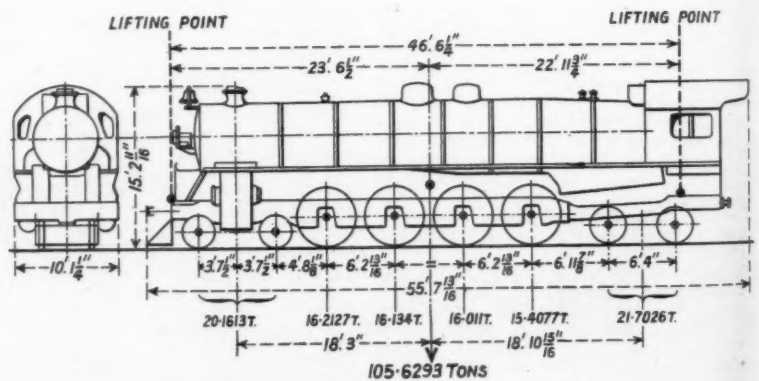


TOP CONNECTIONS EXACTLY AS FOR FORWARD END

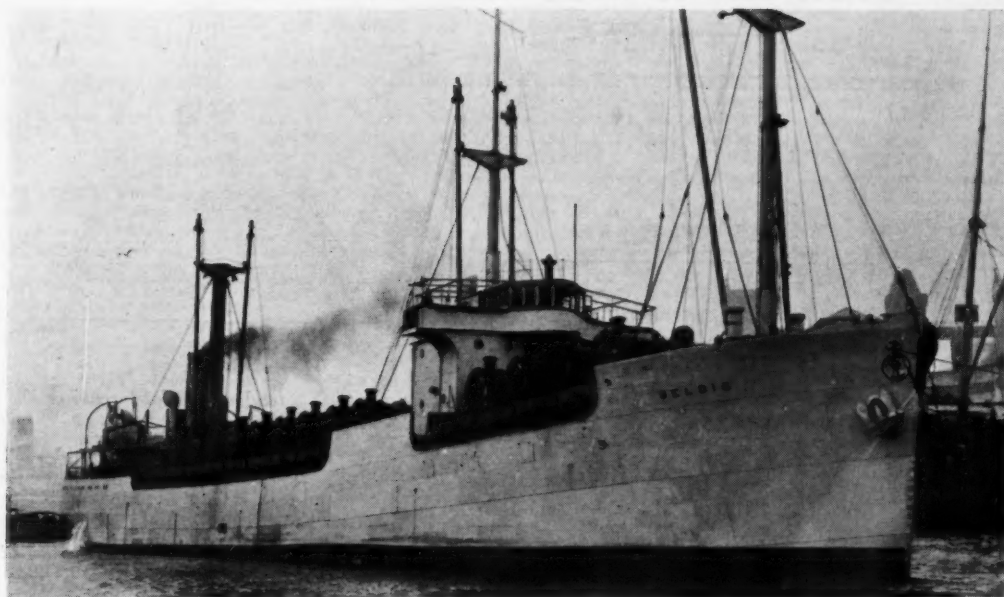


Above: Lifting arrangements used in connection with a diesel-mechanical railcar body for the New Zealand Government Railways

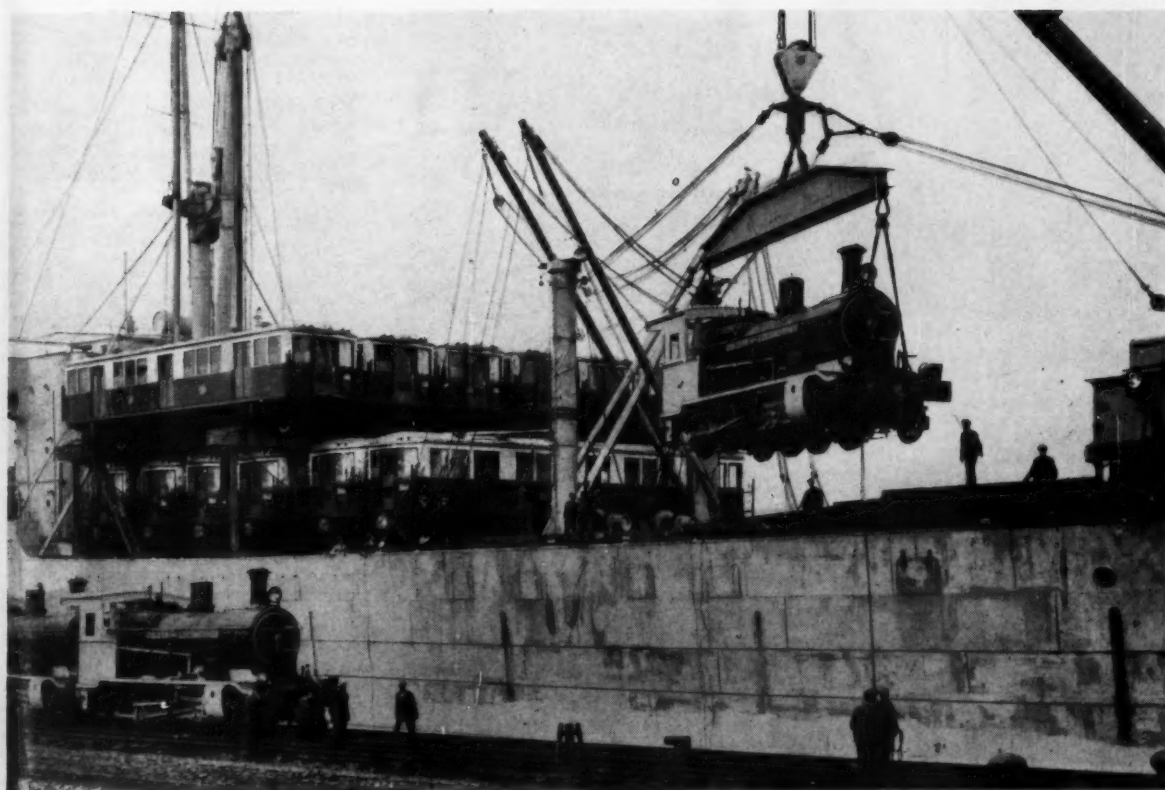
Right: Diagram showing lifting arrangements and weights of a Chinese National Railways 4-8-4 mixed traffic locomotive



Left: Lifting particulars and weights relating to a Buenos Ayres Great Southern Railway 4-8-0 "15A" class locomotive

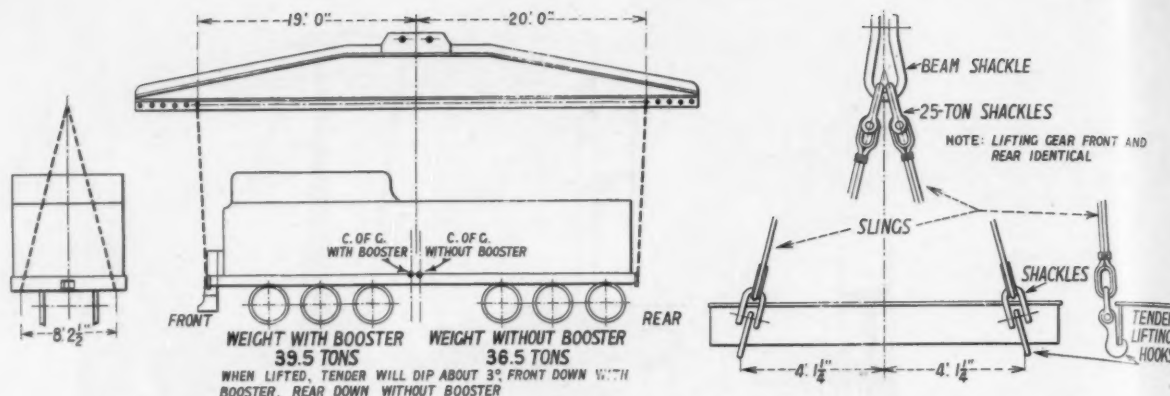


SS. "Beldis" with a full load of steam locomotives

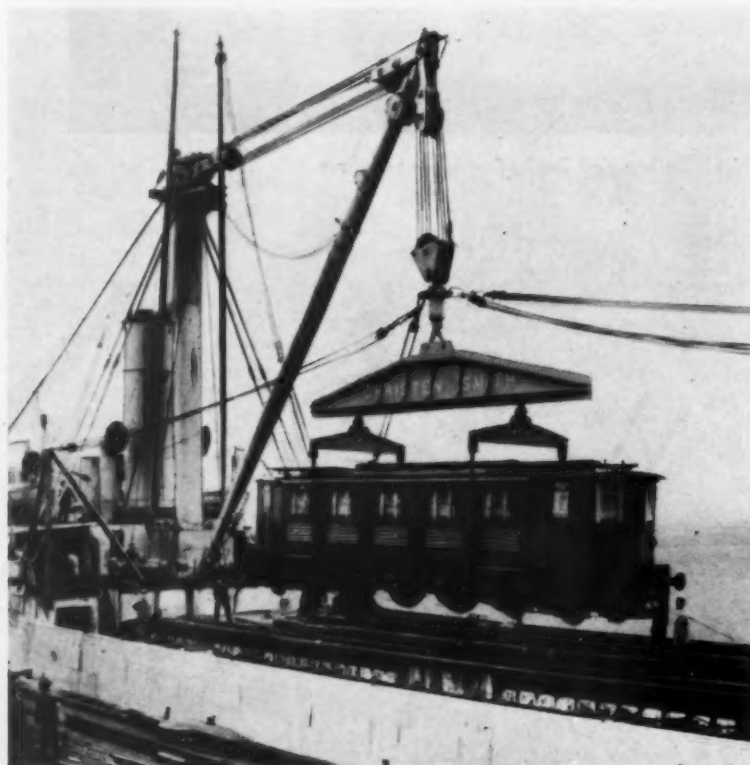


A Belship being loaded with a mixed cargo of coaches and locomotives

SHIPPING FULLY-ERECTED LOCOMOTIVES



Outline arrangement of lifting beam, slings and shackles for use with a tender destined for use on the Chinese National Railways



engine builders. The under sides of these skids are liberally treated with grease; slings attached to each end of the skid are then passed through eye-bolts and shackles fixed in the side of the hold, up through the hatch to the ship's winches, and the locomotives are then "slid" to their allotted position in the hold. Just before the locomotive is dropped on to the skids, wood scotches are placed in front and behind each wheel in such a manner that when the locomotive's weight is resting on the skid they are perfectly secure.

The locomotive is finally secured in position by means of jacks attached to ropes passed through the wheels; jacks are used to tighten the ropes. This method of securing the locomotive provides a cushioning effect from the locomotive springs when rough weather is encountered. For this reason, the locomotive frames or drawbars are never used as points to be used for holding down the locomotive.

(See editorial note on page 474)

An electric passenger locomotive being lowered on to the deck of a Belship

MAIN-LINE GRADE SLEEPERS.—The Ministry of Supply states that the necessity has arisen for a large increase in the production of main-line grade sleepers, 10 in. by 5 in. Sub-standard-grade sleepers are in ample supply, and the production of this grade should be diminished in favour of an increased output of main-line grade, which the various organisations of the home-grown timber trade have undertaken, through their members, to attain. The Timber Control and the Home Timber Production Department request producers to observe the following: (1) Main-line grade sleepers 10 in. by 5 in. with 7 in. face or better to be produced to the maximum possible extent from softwoods, and also from hardwoods

which are not of first quality; (2) sleepers 9 in. by 4½ in. (sub-standard as to size) not to be produced in softwoods, and as few as possible in hardwoods; and (3) no sub-standard sleepers of any size to be produced with less than a 6 in. minimum flat surface.

RUBBER AND INSERTION JOINTING FOR FLANGE AND SIMILAR JOINTS.—A war-emergency revision of British Standard 945 (rubber and insertion jointing for flange and similar joints) has been issued. This has been made necessary by the need to conserve rubber, and supersedes B.S. 945-1941. Certain relaxations in the quality of rubber have been made, and the specification is restricted to three types—soft,

medium and hard. The specification has been extended to cover insertion and sheeting used for high- and low-pressure steam. Copies may be obtained from the Institution, 28, Victoria Street, London, S.W.1, price 2s.

MIXING OF SALVAGE.—The Waste Paper Recovery Association Limited reminds factories and business concerns that their waste paper should be kept clean, and free from all other types of salvage. This particularly applies to those organisations which send off paper in sacks as mixed waste, either to waste-paper merchants, or direct to paper mills. The latter report that an average of ten tons of foreign materials is being found in every hundred tons of waste paper.

RAILWAY NEWS SECTION

PERSONAL

Mr. R. Holland-Martin, Chairman of the Southern Railway Company, has accepted the Presidency of the Railway Convalescent Homes for 1944, in succession to Sir Charles Hambro, Chairman of the Great Western Railway Company.

Mr. H. E. Stratton, A.M.Inst.C.E., Assistant to Engineer (London) (Bridges), L.N.E.R., who, as recorded in our October 15 issue, has been appointed Assistant to Chief Engineer (Steelwork), was educated at the East London College, and began his engineering training under Mr. John Wilson, M.Inst.C.E., M.I.Mech.E., then Chief Engineer of the Great Eastern Railway, in 1899. In 1903 he was appointed Junior Assistant

and similar works. In 1918 he returned to the G.E.R., and until 1922 was Assistant Bridge Engineer to the Chief Civil Engineer; he was promoted to be Bridge Engineer in the latter year. When the amalgamation took place in 1923, Mr. Stratton became Bridge Assistant (Steelwork) to the Engineer, Southern Area, L.N.E.R. He was appointed Assistant to Engineer (Bridges), Southern Area, in January, 1937. Mr. Stratton was Lecturer on Structural Engineering & Mathematics at the L.C.C. Westminster Technical Institute from 1910 to 1916.

Mr. Ivor E. Mercer, A.M.I.Mech.E., M.I.Loco.E., District Locomotive Superintendent, Toton, L.M.S.R., who, as recorded in our October 15 issue, has been appointed District Locomotive Superin-

harbour and power-house machinery. Four years later, Mr. Mercer was given charge at Holyhead, L.M.S.R., of the locomotive depot and harbour machinery. It was during that period that locomotives first ran through unchanged from Holyhead to Euston; all these belonged to Holyhead, and were of the "Claughton" class, as no heavier engines then could be worked along the Welsh coast. In 1928 he was appointed District Locomotive Superintendent, Bolton, and in 1934 took charge of the Wellingborough area, by which time he had held charges in each of the English divisions of the L.M.S.R. Mr. Mercer became District Locomotive Superintendent, Toton, in April, 1939.

Mr. H. G. Prentice, who, as recorded in our October 15 issue, is retiring from



Mr. H. E. Stratton

Appointed Assistant to Chief Engineer (Steelwork), L.N.E.R.



Mr. I. E. Mercer

Appointed District Locomotive Superintendent, Rugby, L.M.S.R.



Mr. H. G. Prentice

District Locomotive Superintendent, Motherwell, L.M.S.R., 1924-43

to the New Works Engineer on the construction of the Woodford and Ilford line. In 1904-5 he assisted in the preparation of the plans of, and surveyed, the Kelvedon & Tollesbury light railway; in the next year he was engaged on similar work for the Temple Mills to Tottenham widening, and afterwards for the Elsenham & Thaxted light railway. Mr. Stratton then was appointed Assistant-in-Charge for survey, working drawings, and for the carrying out of the construction, of the electric power station at Stratford, and in 1907-8 conducted the survey for the Parkeston Quay extension, and supervised the design of the tranship warehouse. In 1909-10 he obtained data of all G.E.R. overbridges, and made calculations of their carrying capacities for the Heavy Motor Cars Orders, and, as Principal Assistant to the Bridge Engineer from 1910 to 1916, dealt with all bridge reconstruction, and with the extension of Bishopsgate Goods Depot warehouse. He then joined the Armed Forces and served in France and Belgium; during 1916-17 he was on reconnaissance, survey, and setting-out work, and reported on bridge capacities in the 4th Army area. He was next on special duty at G.H.Q. in connection with standard bridge-designs, and was afterwards construction officer in charge of junction lay-outs, quadrupling,

tendent, Rugby, and who becomes also Works Superintendent of the C.M.E. Locomotive Shops there, began his career by qualifying for membership of the Institution of Civil Engineers, and the Institution of Mechanical Engineers. In 1909 he became a pupil of Mr. Dugald Drummond, then Chief Mechanical Engineer, L.S.W.R., with whom he had experience in the installation of all kinds of machinery at Eastleigh Locomotive Works, then under completion. He was attached also to the staff which tested the Drummond four-cylinder 4-6-0s. Mr. Mercer received certain training under Mr. D. C. Urie, who retired recently from the position of Superintendent of Motive Power, L.M.S.R. In 1911 he was transferred as a pupil of Mr. C. J. Bowen Cooke, then Chief Mechanical Engineer, L.N.W.R., and went through Crewe Works and had extensive footplate experience. After a period in the drawing office, and after carrying out tests on the "George V" class engines, he was sent as Assistant to Crewe South steam shed in 1913, with date of appointment January, 1914. During the war of 1914-19 he served in the Royal Navy; afterwards he was given charge of Burton (L.N.W.R.) for eighteen months, and in 1924 was made Resident Mechanical Engineer of the Dundalk, Newry & Greenore Railway in Ireland, where he had charge of locomotives, carriages, wagons, and

the position of District Locomotive Superintendent, Motherwell, L.M.S.R., served an apprenticeship with the former Caledonian Railway at Perth, and at St. Rollox Works, and studied at the Royal Technical College, Glasgow. In 1903 he was appointed Test House Inspector, and a year later became Fitter-in-Charge at Ardrossan. In 1905 he was made Assistant Foreman at Polmadie, and later held positions as District Locomotive Foreman at Forfar (from 1909), Carlisle (from 1912), Hamilton (from 1922), and Daws-holme (from 1923). Mr. Prentice took up in 1924 the position from which he now retires.

Mr. S. Roberts, District Goods Manager, Birmingham, L.M.S.R., who, as recorded in our October 15 issue, has retired on account of ill-health, entered the service of the former L.N.W.R. at Manchester in 1900. After gaining experience in all sections of the Goods Department, he held positions as Goods Agent, Longsight; District Traffic Agent, Halifax; Goods Agent, Stockport; Joint Goods Agent, Leeds (L.N.W.R. & L.Y.R.); Assistant District Goods Manager, Leeds; and Assistant District Goods Manager, Liverpool. In 1929 he became District Goods Manager, Wolverhampton, and in June, 1940, he was appointed to the similar position at Birmingham. Mr. Roberts was

a member of the Council of Wolverhampton Chamber of Commerce; in 1939 he was appointed President, and was re-elected for 1940-41.

We regret to record the death on October 23, at the age of 79, of Dr. G. T. Moody, D.Sc., a Director of the Midland Railway Co. of Western Australia Ltd., of the Salvador Railway Co. Ltd., and of Argentine Transandine Holdings Limited.

GREAT SOUTHERN RAILWAYS (EIRE)

Mr. Leo Maher has been appointed Traffic Superintendent, Omnibus Department, Great Southern Railways (Eire). Mr. Maher was on the staff of the Irish Omnibus Co. Ltd. before it was acquired by the Great Southern Railways Company.

Mr. J. S. Quigley has been appointed Rolling Stock Engineer (Roads). He was District Superintendent of the G.S.R. Omnibus Section in Cork before being transferred to Dublin, first as District Superintendent, and then as Chief Road Superintendent.

We regret to record the death at Philadelphia, U.S.A., on October 26, at the age of 71, of Mr. J. E. Widener, a Director of the Baltimore & Ohio Railroad Company.

Mr. R. J. Howley, who is Chairman of the British Electric Traction Co. Ltd., has been elected to the board of the Electrical & Industrial Investment Co. Ltd., in place of the late Mr. E. R. Soames, and has been appointed Chairman of the company.

Mr. Guy D'Arcy Meynell, M.Inst.C.E., A.M.I.E.E., Assistant Constructional Engineer, London Passenger Transport Board, retired on October 23. He was responsible, under the Electrical Engineer (Tramways), for the modernisation of Greenwich power station and tramway sub-stations.

We regret to record the death on November 2 of Mr. Robert Ledger-King, late Manager, West Clare Railway Company, one of the lines absorbed by the Great Southern Railways Company.

Mr. F. J. Hills, London Manager of the Metropolitan-Cammell Carriage & Wagon Co. Ltd., who, as recorded in our September 3 issue, has been ill for some months, has returned to his office.

We regret to record the death of Mr. Edmund H. Kellie, formerly District Traffic Superintendent, Bengal & North Western Railway.

INSTITUTE OF TRANSPORT

The undermentioned members of the staff of the South African Railways & Harbours have passed the associate membership and graduation examinations of the Institute of Transport for 1943:—

Associate Membership, Part 1: Messrs. T. G. Du Plessis (Port Elizabeth), and E. B. E. S. Richards (Cape Town).

Associate Membership, Part 2: Mr. L. W. Vos (Johannesburg).

Graduateship, Parts 1 & 2: Messrs. E. G. D. Coetzee (Cape Town), and D. L. Powell (Johannesburg) (with honours).

Graduateship, Part 1: Mr. D. W. De Vos (Cape Town).

Graduateship, Part 2: Messrs. P. J. Birk, J. D. Carter, M. Coetzee, R. A. Mann, W. H. J. Muller, S. M. Rossouw, C. G. C. R. Steyn, R. T. Van Der Linden, A. J. Venter, and H. J. W. Venter (Johannesburg); C. F. De Witt (Durban); D. B. Garisch, and N. S. Louw (Cape Town); and C. E. Lubbe, C. W. Potgieter, and E. S. Williamson (Bloemfontein).

The many readers to whom he was well known will share our sense of loss at the news that Lt.-Commander C. P. L. Sanders, R.N., previously reported missing at sea in March, 1943, is now officially presumed to have lost his life. Lt.-Commander Sanders went from school to Osborne and Dartmouth and was at sea, during the last war, by the time he was 16 years old. He served in various naval units but was particularly at home in destroyers and submarines. At the end of the war he was stationed for two years in the Mediterranean and Black Sea. This was at the time of the fighting between the White Russians and the Reds. He was invalided out of the Navy in 1926 and later joined the advertising staff of *The Railway Gazette* and associated publications; he became manager of our



Lt.-Commander C. P. L. Sanders, R.N.

Manager of our Manchester office, who has been reported missing and presumed lost

Manchester office in 1927. He rejoined the Navy at the outbreak of this war and was engaged on boom defence work. While in Africa he contracted malaria and was being invalided home when his ship was torpedoed.

It was rather a bold experiment, both on his part and on ours, to plunge from a naval career to a newspaper career. Although rare, adaptability for commerce is not unknown on the part of naval officers. Sanders was on very new ground. He was an indefatigable worker and, with confidence and experience, rapidly rose from a small local beginning to the control and organisation of a wide geographical area, with Manchester as the centre, and responsibility for the group of trade and technical publications of which *The Railway Gazette* is one. He applied his talents with equal zeal to grasping the essential details of the industries which he contacted. He developed an exceptional liking for his new avocation into which he threw himself wholeheartedly. He had an intense belief in the efficacy of well presented and well directed advertising. His enthusiasm for his work as an advertising man was unbounded, and if there was an advertising contract to be fixed or some point to be settled, not for him the easy way of the telephone. He was a great believer in personal communion. The prospect of driving his car in all weathers for long

journeys over the wide territory of the North and the inescapable late returns seemed only to stimulate him for the following day's work. To those vested with the control and direction of the journals published from 33, Tothill Street, Charles Sanders will remain an abiding memory of service faithfully rendered. G. R.

Mr. Arthur Brampton is relinquishing the Chairmanship of the Renold & Coventry Chain Co. Ltd., but retains his seat on the board. Mr. C. G. Renold is resigning the Managing Directorship and has been appointed Chairman. Mr. R. O. Herford has been appointed Managing Director. He has been Works Manager for many years, and has been lent to the Ministry of Supply as Controller of Inspection (Administration); he will assume the duties of Managing Director as soon as released.

Mr. William Glass, Director & Works Manager of Johnson & Phillips Limited, has been appointed Deputy Managing Director, and Mr. Stanley J. Passmore and Lt.-Colonel R. W. C. Reeves, Directors, of the company.

L.N.E.R. APPOINTMENTS

The L.N.E.R. announces the following appointments:—

Mr. W. S. Barnes, Rating Surveyor (England & Wales), has been appointed Rating Surveyor with all-line responsibility for the rating work. He will continue to act as Estate Surveyor, North Eastern Area.

Mr. R. M. Scott has been appointed Rating Agent (Scotland), with responsibility to the Rating Surveyor for Scottish rating matters. He will continue to act as Factor, Scottish Area.

Mr. K. B. Turner, who was Acting District Engineer, Sheffield, has been appointed District Engineer, Sheffield.

Mr. R. P. Critchley, District Locomotive Superintendent, Edinburgh, has been appointed District Locomotive Superintendent, Glasgow, in succession to Mr. G. W. Phillips, who has retired.

Mr. B. P. Blackburn, District Locomotive Superintendent, Burntisland, has been appointed District Locomotive Superintendent, Edinburgh, to succeed Mr. Critchley.

Mr. D. A. Lamb, of the Central Traffic Office, Marylebone, has been appointed Acting Assistant District Superintendent, York, in succession to Mr. A. J. Johnson, who recently was appointed Acting District Superintendent, Sunderland.

Mr. H. J. Williams, Locomotive Works Manager, Gorton, has been appointed Carriage & Wagon Works Manager, Gorton, to succeed Mr. G. Caster.

Mr. G. Caster, Carriage & Wagon Works Manager, Gorton, has been appointed Locomotive Works Manager, Gorton, to succeed Mr. H. J. Williams.

Mr. J. H. P. Lloyd, Acting Assistant Locomotive Works Manager, Doncaster, has been appointed Locomotive Works Manager, Stratford, to succeed Mr. A. O. Chilvers.

Mr. A. O. Chilvers, Locomotive Works Manager, Stratford, has been appointed Assistant to the Mechanical Engineer (Out-door), Doncaster, to succeed Mr. J. N. Bull.

Mr. J. N. Bull, Assistant to the Mechanical Engineer (Out-door), Doncaster, has been appointed Acting Assistant Locomotive Works Manager, Doncaster, in succession to Mr. J. H. P. Lloyd.

Mr. B. Holroyde, Assistant Locomotive Works Manager, Doncaster, who has been engaged on special duties, has been appointed Acting Works Manager, Faverdale, during the absence of Mr. S. L. Baister with H.M. Forces.

TRANSPORT SERVICES AND THE WAR—215

The Movement Control

On November 4, Major-General N. G. Holmes, Director of Movements, War Office, took as his subject "Railways in Wartime" for a broadcast in the War Commentaries series. Explaining the burden of war traffic which British railways are carrying, and are likely to carry with ever-increasing intensity this winter, he explained broadly what Movement Control comprises. He defined it as movement of personnel on the one hand, and movement of freight (including all stores and equipment required by the three Fighting Services), on the other hand.

Service individuals can get into a train without any special arrangements, but a unit or a party of Service personnel—or guns or military supplies—require to have their movement arranged for them, with the railway companies, by someone who knows where they are to go, where from, and when. This is the job of Movement Control, which is responsible for saying to the railways firmly but sympathetically what the Army wants in the way of movement. Every day, therefore, Movement Control is in conference with the railways agreeing practical details, arranging the routes and timings. Movement Control then tells the unit or party where to entrain; while the railways provide the reserved compartments, rail wagons, or special trains at the right time. During four years of war each has learnt to understand the other's point of view so that arrangements are made in a true spirit of co-operation.

Troop movements are of four kinds, namely: training; leave; and inward movement to, and outward movement from, the United Kingdom. Training means a continuous movement of units to and from tank ranges, artillery practice camps, combined operations training centres, and so on, exercises, sometimes large-scale manoeuvres, and, from time to time, a changeover of whole divisions from one type of training area to another.

Leave movement cannot, as a rule, be organised in special trains. It is predominantly individual movement and, in consequence, soldiers going on leave and returning from leave fill much of the space in public transport services—that is why the trains are crowded.

Overseas movement, whether inward from America or Canada, or outward to one of our many fronts, movement to and from the ports of these islands is, of course, handled almost entirely by special trains. These overseas moves take the highest priority of all traffic. The same priority holds good for inward and outward freight movement. Week after week our ports and the railways serving them are soaking up both raw materials for munitions and the finished article from North America. Week after week the same ports are loading cargoes drawn from military depots all over this country to maintain our armies overseas in munitions, foodstuffs, ordnance stores, engineer material, and medical equipment. All this means careful adjustment of rail movement schedules, to maintain the shipment programme, but without congesting the ports or their approaches. In the same way that troop movements are arranged, Movement Control is in constant session with the representatives of the railways, working out the most economic means of handling the vast daily tonnage either in special goods trains or by wagon loads working through to destination on normal freight services. The outward military freight movement, which runs into hundreds of thousands of tons a month,

gives the railways and Movement Control one of their greatest problems.

In days of peace export traffic was undertaken in a much more leisurely fashion than to-day. Goods for export were sent to a port, stored in sheds near the ship's side on the quay, selected, and loaded into ship. To-day, by reason of the pressure of time, the loading of ships has to be planned carefully on paper, in conjunction with the Ministry of War Transport, before the arrival of the cargo at the quayside, and more often than not, before the ship berths. So that nowadays the trains have to be run alongside the ship for direct loading and, consequently, it is essential that trains arrive with the right cargo in the right order and in time to ensure continuity of loading. Time and tide will wait for no man and we are up against time and tides throughout, as the Navy will wait for no man either, on account of convoy sailing dates and escorts. This is why military movement must have the highest priority.

This question of urgency also means that arrangements have to be made, and may have to be modified, at very short notice. For example, a ship may suddenly break down and loading may have to take place in Wales instead of Scotland. The destination of a unit may be altered at the last moment, or the date of an exercise may be changed on account of weather. All this means patience and making the best of a bad job, and it is remarkable to me how patient most railway men are.

The third difficulty is the changed direction of movement and density of traffic—changed, that is, from peacetime working. The new military depots, many of them built during the war, may be in God-forsaken spots, and so may many training camps. New junctions, loops, and sidings have had to be put in at many points to handle military traffic, as well as many miles of railway in various depots. All this work itself involves the movement by rail of much construction material, such as ballast, sleepers, track, track equipment, and signals.

These are the various types of military movement, which must be linked in a coherent pattern. For example, if a British Armoured Unit lands in Sicily or Salerno, this is the fruit of many months of preparation and movement. The unit is trained in England, changing stations perhaps more than once for a variety of training experience. Its tanks and armament came from North America through a military depot in the Midlands. Most of the men had homes in the south of England where they took the leave that came their way, and, last of all, their embarkation leave. The unit, mobilised and prepared for overseas, entrained, let us say, in East Anglia. Its tanks were shipped from a port in Wales, the men themselves, together with perhaps 40,000 more, all bound for the Mediterranean, embarked at a port in Scotland. The additional ammunition, petrol, spare parts, and supplies that this unit will need are still being despatched from military depots, for shipment in maintenance convoys. This is the history of the despatch of only one unit.

To move the personnel of only one Division requires 45 special trains. To move a whole Division complete with vehicles by rail takes 140 special trains. It would seldom be necessary to move all the vehicles by rail; the majority naturally go by road.

Last of all, military demands upon the railways are still increasing. Military move-

ment, in terms of special trains already arranged, has doubled in the last 18 months, and the trend is still upward. This is the natural outcome of the Fighting Services going over to the offensive from the defensive. For the railways in this country, this will be the heaviest winter of the war, so far as military traffic is concerned. This must be so if these islands are to be a base for the liberation of Western Europe.

(See editorial notes, page 473)

Stations and Branches Closed

Since the early part of this year, various stations and branch lines have been closed entirely, or to passenger traffic only. In some cases the information has been recorded in our columns previously:—

L.M.S.R.

Hornsey Road and Junction Road Passenger Stations, on the Kentish Town and Barking line, were closed on May 3 as a wartime measure. Parcels are dealt with at Upper Holloway. (See our April 30 issue).

The Dumfries-Moniave branch was closed for passengers on May 3. Parcels and miscellaneous goods traffic formerly handled at Irongray, Newtonnairs, and Stepford Stations is now dealt with at Dunscore. Parcels and miscellaneous goods traffic formerly handled at Crossford and Kirkland Stations is now dealt with at Moniave. Goods, mineral, and livestock traffics in full wagon loads continue to be dealt with by all the stations on the branch.

Airdrie (L.M.S.R.) and Calder (near Coatbridge) Stations were closed on May 3 for passengers and passenger train traffic. Goods, mineral, and livestock traffic continue to be dealt with. Parcels traffic is now handled at Coatbridge (L.M.S.R.). (See our May 7 issue).

On May 3, the passenger train service between Mauchline and Catrine was withdrawn, and Catrine Station was closed for passengers. (See our May 7 issue).

Wreay Station (south of Carlisle) was completely closed on August 16. Parcels and freight train traffic is dealt with at Southwaite.

Mount Vernon Station (on the Rutherglen and Coatbridge line via Carmyle) was closed for passenger and passenger train traffic on August 16, for the duration of the war. Parcels and miscellaneous goods traffic is dealt with at Carmyle. Mount Vernon Station continues to handle goods traffic in full loads.

Waterloo Road Station, Staffs. (between Hanley and Cobridge) was closed to all traffic on October 4. Parcels traffic is dealt with at Hanley.

Methley Junction (former L. & Y.R.) Station, which is between Methley (Mid.) and Castleford (L. & Y.), was completely closed on October 4. Services are available from Methley (Mid.) and Methley (L.N.E.R. & L.M.S.R. Joint) Stations.

On November 1 the passenger train service was withdrawn from the Balerno branch, immediately to the south of Edinburgh. The stations affected are Hailes Halt, Colinton, Juniper Green, Currie, and Balerno. Parcels traffic continues to be dealt with at these places, but is now conveyed by freight train.

G.W.R.

Goodrington Sands Halt (between Paignton and Churston) was closed on October 4, and is to be re-opened in May of next year.

S.R.

Tovil Station (between East Farleigh and Maidstone) was closed on March 3.

Lyminge Station (on the Folkestone-Canterbury line), and Hythe Station (the terminus of a short branch from Sandling

Junction) were closed on May 3. This was recorded in our May 21 issue.

L.N.E.R.

Tidal Basin Station (between Custom House and Canning Town) was closed to passenger traffic on August 15.

Fushiebridge ($\frac{1}{2}$ of a mile from Gore-bridge, on the Edinburgh-Galashiels line), was closed to passenger traffic on October 4.

Awsorth Goods Station (in the Southern Area) was closed on June 1. All traffic is now dealt with at Kimberley.

L.M.S.R. and L.N.E.R. Joint

Victoria Park Station (L.M.S.R. & L.N.E.R. Joint), which is on the Dalston Junction to Poplar line, was closed on November 8. The alternative stations are Homerton and Old Ford.

Speed Restrictions in Germany

A German Decree issued towards the end of October provides for the reduction by 15 per cent. of the normal maximum speed of all road vehicles, in order to conserve the use of tyres "which may be irreplaceable in the future."

Budapest Local Transport

With the object of accelerating the tram services, and effecting economies in fuel consumption, more than 200 tram stops were abolished in Budapest, but by August last it was found that matters had been carried a little too far, and the distribution of tram stops is now being revised.

Budapest tram and bus fares were increased substantially as from August 9, and a special transport coinage was introduced at that time to facilitate the sale of tickets of which the revised values are not readily payable by the ordinary coinage. We refer to this further in an editorial note, page 474.

According to recent Hungarian statistics, the total performance of the Budapest trams in 1942 aggregated 64,119,500 miles and 465,227,052 passengers. Bus passengers totalled only 26,000,000 by reason of the curtailment of the bus services resulting from tyre and motor fuel shortage.

Railway Sabotage in Belgium

Patriot activities in Belgium continue to result in repeated, and sometimes serious, interruption to the railway services which are being used in the interests of the German *Wehrmacht*, and the Belgian authorities in London have recently secured details of quite a number of representative instances. We are indebted to Mr. A. Mertz, Delegate, Belgian Railways & Marine, for the following details:—

Damage to the extent of two million francs was caused by two patriots when they burned out the railway electric cabin at Marloie, on the Brussels-Luxembourg line. They first forced the under-station-master, the signalman, and the guard to stand some distance away, and then set fire to the cabin.

At Thulin, on the Quievrain-Mons line; at Masnuy St. Jean, on the Mons-Brussels line; and at Uccle, on the Schaerbeek-Charleroi line; rails were destroyed by explosions due to sabotage.

At Iseghem (Flanders) saboteurs set fire to three railway wagons loaded with 4,340 kg. of cotton.

On the Courtrai line a goods train was derailed near Gouylez-Piéton (Hainaut) and on the Mons-Brussels line one at Ghlin.

Three men armed with revolvers entered a signal box on the Brussels-Denderleeuw line, tied up the signalman, and destroyed the mechanism.

In Morlanwelz-Hayettes (Hainaut) rails were unscrewed during the night, causing a

German train to be derailed; 18 wagons were destroyed.

In Lobbes (Hainaut) armed and masked patriots dynamited a signal box after they had forced the signalman to leave his post.

Saboteurs blew up two railway lines between Flémalle-Liège-Guillemins, at the entrance of the Sclessin Viaduct.

A bomb timed to explode after the passage of the engine and of the first few wagons badly damaged a German train near Erbisoeul Station (Hainaut). On the same day, several wagon-loads of straw were set on fire in various stations in the Mons district.

Within the past few weeks a further appeal to Belgian railway workers to interrupt the transport of German soldiers has been issued by the Belgian Union of Railwaymen. The appeal states: "We must not help to transport troops that will be used to strengthen the crumbling German military edifice. We are soldiers on a very special front. We must sabotage locomotives and track, and damage signals and telephone lines."

Ambulance Trains in North Africa

At the time of the Allied landings in North Africa, in November, 1942, the French had in commission two or three ambulance trains of the famous *Hommes 40-Chevaux* 8 kind, comprised of a number of closed trucks with two or three non-corridor coaches at the end. These were taken over, but, even when cleaned and improved by British standards, they are at best uncomfortable and very difficult to work, the supply of lighting and water is primitive, and adequate nursing and feeding provide a great problem. Three newer trains were subsequently assembled by the British authorities. The make-up of these trains was approximately the same, although variations due to wear and tear occurred. From head to tail the usual composition was:—

1.—*Fourgon-Dortoir*—an old 6-wheel first and second class coach converted into a guard's van-cum-sleeping-quarters for spare engine crew (20 tonnes).

2.—A 6-wheel van converted into a sizeable kitchen and a small dispensary.

3, 4, and 5.—Fairly modern 6 or 8 wheel first and second class composites with side corridors and open connections between coaches. No. 3 was used as quarters of the train staff of 24, while Nos. 4 and 5 housed 46 to 72 sitting patients. (Each vehicle 20 tonnes).

6, 7, and 8.—Fine modern 39-tonne bogie stock (6 and 7 mail vans, and 8 a luggage van), each with a lavatory compartment and each fitted with 30 stretchers in 3-tier stands, thus accommodating in all 90 lying cases. Covered vestibule connections joined them. The stretchers were attached to springs. These were of two types, the French one stiffer and of better pattern than the English model. The suspension and the smooth running of this stock made for great comfort. There are but few of these coaches in Algeria and the transfer of 9 for these trains left the railways very short.

9.—First-second class 6-wheel side corridor composite, a modern coach of 20 tonnes. This accommodated the offices, the two medical officers, and the two nursing sisters.

The train then amounted to about 240 tonnes unladen, and could carry 90 lying patients, about 130 sitting wounded, and a crew of about 30.

Aided by downgrades and priority, these trains loaded with wounded were covering the Souk-Ahras to Algiers run in about 23 hours in the spring of this year. During the heavy fighting in Tunisia of April and May last, the wounded were evacuated back to Souk-Ahras by a number of con-

verted and Red-Cross-embazoned diesel railcars coupled in pairs; this service at first ran from Souk-el-Arba, and then, as the fighting line advanced, the *Autorails* (as they are called) used to creep up by night to Souk-el-Khémis, Mastouta, and, later, even to Oued Zarga (the next station to Medjez-el-Bab) and carry back thence their complement of some 90 wounded. After the fall of Tunis and the re-opening of through communications, the *autorails* (of which there were about 6 of standard gauge) maintained the ambulance link between Tunis and Souk-Ahras, while the wounded were brought up from Sousse to Tunis by similar diesel trains of the narrow-gauge sections of the Tunisian Railways Company.

Increased Hungarian Air Transport Fares

Air transport fares and luggage rates on the services between Hungary proper and Hungarian-occupied Transylvania were increased substantially some time ago. It is stated that the increased air transport fares are still below the prices of second-class railway tickets available on fast trains as recently increased.

New Balkan Highways

According to a Bulgarian report, referring to the period immediately before the surrender of Italy, the Italo-Bulgarian highway from Bar in Montenegro to Rouschouk was well under construction in July last, and discussions were then in progress regarding the administration of the road. These have been nullified by the altered status of Italy, and it is understood that the Bulgarians have taken over control of the work, under German supervision. The same report stated that the Germans were building 1,200 km. (745 miles) of new roads in Bulgaria, for which the material has been imported free of duty.

Egyptian Speculation in Motors

As imports of motor vehicles for civilian use from the United Kingdom and the U.S.A. into Egypt are almost at a standstill, those vehicles which are available are the object of speculative transactions, especially as it is generally believed that imports will be restricted for some time after the war and that the British and American army administrations will not readily dispose of their fleets of motor vehicles in Egypt. The same may be said in respect of tyres. Many second-hand motor vehicles are being bought solely for the purpose of securing their components (such as instruments) only to be disposed of when they will fetch sky-high prices.

Mexican Track-men on the New York Central

The first of the great Eastern railways in the United States to employ imported Mexican workmen, under the convention reached between the Governments of the United States and Mexico, is the New York Central System. On August 18 some 749 Mexican permanent way men began service, and have been distributed among 13 camps in Ohio and Michigan, where they will work on the tracks of the New York Central Lines West of Buffalo, and on those of the two subsidiaries, the Michigan Central and the Big Four (Chicago, Cleveland, Cincinnati & St. Louis). So far as possible, the Mexican gangs will work independently, without admixture of American workers, and experienced Mexican track-men, who went to the U.S.A. during the 1914-1919 war, and remained permanently with the New York Central, have been appointed to act as interpreters and to attend particularly to the safety of the men in each gang. Numbers of Mexicans are already at work on the railways in the South West of the U.S.A.

Highway Construction in Argentina

In the course of a recent address to the Buenos Aires Association of the Institution of Civil Engineers on "Highway Construction in Argentina," Señor Emilio Frugoni, President of the Argentine National Roads Board, said that barely a decade ago the public had had to rely for transport mainly on railways; it was said between 1910 and 1930 that Argentina possessed one of the best railway systems and some of the worst roads.

The National Highway Law, which had resulted in the creation, and had established the autonomy, of the National Roads Board, provided for the exclusive use of funds derived from the fuel tax for the construction of public roads. Thus, highway building was financed mainly by those who benefited. A yearly Treasury grant of 10,000,000 pesos completed the Board's revenue, 60 per cent. of which was allotted to the "national" road system, and the balance to the provincial boards, as payment for works carried out by them on "provincial" roads, on a basis of quotas not exceeding in each case the amount invested by the province concerned in highway construction.

The "national" roads included those giving access to railway stations and ports; inter-provincial and inter-territorial roads; those linking the larger cities and ports; and the international highways. They comprised a total of 59,336 km. (36,870 miles). The "provincial" system consisted of about 500,000 km. (310,000 miles). During the last few years, approximately 600,000,000 pesos had been invested in road construction by the National Roads Board, and some 200,000,000 pesos by the provinces. It was estimated that, by 1954, when the present Law would expire, the national expenditure on highways would have amounted to 2,700,000,000 pesos.

Southern Railway Housing Schemes

(From a correspondent)

The Minister of Health has informed the nation that we shall require from three to four million houses after the war. In the task of providing these the railway companies may be able to assist. Between the two wars the Great Western, the London Midland & Scottish, the London & North Eastern, and the Southern Railways promoted schemes for assisting their staffs to obtain suitable housing accommodation, either by building, or by advancing money to assist in the purchase of, dwellings.

Much has been written about the G.W.R. Housing Scheme, but little of the Southern Railway schemes. The extension of electrification on the latter meant the establishment of depots for motormen and guards; and this resulted in a good deal of transferring of members of the staff, who naturally wanted houses near their places of work. The Southern Railway Company owns 5,721 houses, cottages, and flats suitable for accommodating members of the staff; and 1,773 artisans' dwellings, situated mainly in the Metropolitan area. Of the former total, 4,039 are occupied by the company's employees, and the remainder are let to such persons as pensioners or widows of employees, or to people unconnected with the railway. During the period from 1919 to 1939, 512 cottages, houses, and flats were erected by the company for the

purpose of housing its staff. It lends money in approved cases to persons in its employment to enable them to purchase their homes. Normally the amount of the loan does not exceed 80 per cent. of the company's surveyor's valuation; but exceptions are made occasionally. The sum borrowed is repaid with interest over an agreed period not exceeding 20 years.

In the majority of cases houses have been purchased, but in a few instances the Southern Railway Company had advanced money to enable a member of its staff to build. Arrangements exist with the Provident Mutual Life Assurance Association to cover a borrower under the Southern Railway Housing Loan Scheme, in the event of his death, for the amount outstanding, thus securing the property to his beneficiaries free of debt.

Harnessing the River Indus

In the Indian province of Sind a considerable mileage of railway has been constructed in recent years to cater for traffic resulting from the great Lloyd Barrage irrigation scheme, harnessing the waters of the River Indus. The North Western Railway has been responsible for about 200 miles of 5 ft. 6 in.-gauge extensions known as the right and left bank feeder-lines, and the Jodhpur Railway has built several metre-gauge branches in the barrage area.

The work has involved converting some 14,000 sq. miles from desert into a cultivated area, at a cost of £15,000,000. By comparison, the total cultivation secured by Nile irrigation works in Egypt is only about £2,500 sq. miles. The whole area covered by the Lloyd Barrage scheme is over 17,000 sq. miles. The aggregate lengths of the canals and distributaries is 47,800 miles; one of the former is 370 ft. wide, or 85 per cent. wider than the Suez Canal, and has a discharge not far short of that of the Thames at London Bridge. This considerable mileage of channels and the barrage necessitated the movement of over 278,500,000 cu. yd. of soil, mainly by means of 46 dragline excavators, some of them among the largest then existing, a decade-and-a-half ago.

The barrage across the Indus has 66 sluice openings, each 60 ft. wide and fitted with an adjustable gate weighing 50 tons, operated by electric power. The opportunity has been taken of constructing a roadway over the barrage to the relief of the famous Lansdowne cantilever road-rail bridge a few miles away.

From the Indus the water is carried primarily by four main canals on the left, and three on the right, bank, and in all there are some 1,889 bridges and regulators of various sizes. It is estimated that every year about 285,000,000 tons of silt is carried in suspension by the Indus past Sukkur, the city near the barrage. At any rate, 97 sq. miles of land have been added to the delta of this river in a period of 31 years. The deposit of silt in such quantity is gradually raising the bed and, therefore, the flood level of the river. In time this will have to be counteracted by the raising of the guide banks confining the river to its course. Without them, the river tends to meander at will all over the province, which has almost entirely an alluvial soil.

The value to the North Western Railway of so vast an additional area brought under cultivation by the construction of the barrage is obvious. It is noteworthy also that, in addition to the new feeder lines, one of the main routes of this

system—the double line to Karachi—traverses the whole length of the left bank barrage-irrigation area, and a secondary main line from Kotri to Ruk serves the right bank area throughout its length. The whole of the now-fertile tract of country, nearly equal in size to the whole of Egypt, therefore is well catered for by this State Railway system assisted by the metre-gauge lines to the south.

Staff and Labour Matters

Bank Holidays—Railway Crossing Keepers

The Chairman of the Railway Staff National Tribunal has issued recently his decision on a claim of the National Union of Railwaymen that the day off with pay in lieu of either Whit Monday or August Bank Holiday to be given to male crossing keepers employed in category "A" and "B" posts and canal lock keepers employed on a 24-hr. basis, should be leave from duty for a full working day, in accordance with Railway Staff National Tribunal Decision No. 3, Part V, which provides that all staff in the conciliation grades "shall receive a day off with pay at ordinary rate in lieu of each day so worked."

The Railway Staff National Tribunal in Decision No. 3, dated August 9, 1937, awarded as follows:—

"All staff whether in the conciliation or the salaried grades, who are required to work on Whit Monday or August Bank Holiday (or in Scotland two other days as may be agreed between the railway companies and the unions) shall receive a day off with pay at ordinary rate in lieu of each day so worked, at a time to be chosen, within the customary railway staff holiday season, by the railway companies."

Below are the rates of pay and conditions of service to be applied to crossing keepers which were laid down in 1921:—

- | | |
|---|--|
| (a) Men responsible for the gates during the whole of the 24 hr. or for the whole time the crossing requires attention where this does not extend to 24 hr. | To be paid the following rates of wages on the basis of 6 days a week:—
London & Industrial B 40s.
Rural " A 59s.
" B 40s.
" A 57s. |
| (b) Men responsible for the balance of the time the crossing requires attention where one 8-hr. crossing keeper is employed for the busiest 8 hr., or other relief is given for any portion of the 24 hr. | To be paid the following rates of wages: London & Industrial B 40s.
Rural " A 59s.
" B 40s.
" A 57s.
plus a flat rate of 3s. a week to compensate for the extra hours it is necessary to be within call. |
| (c) Men employed on 8-hr. turns of duty, and coming within the scope of the conciliation scheme. | To be included in the conciliation scheme and paid in accordance with the agreement of March 20, and National Wages Board report of June 3, 1920. |

The "A" rates shown are those in operation on July 1, 1921.

Crossing keepers included in (a) and (b) are to receive the general conditions of service applicable to conciliation scheme grades with the exception of those relating to payment of an enhanced rate for night duty and to standard hours of duty. Crossing keepers covered by (c) are to be given the conditions of service applicable to grades included in the conciliation scheme.

The rates of pay of crossing keepers have undergone considerable changes since 1921

and at the present time are London, 75s., industrial, 73s., and rural, 72s. The conditions of service of canal lock keepers are set out in an agreement of September 1, 1926, which provides that lock keepers will receive the general conditions of service of railway conciliation grades except as below:—

- (1) Lock keepers responsible for the lock for the whole of the 24-hr. or for the whole time attendance is required.
- (2) Lock keepers responsible for the balance of time the lock requires attention where one 8-hr. lock keeper is employed for the busiest 8 hr. or other relief is given for any portion of the 24-hr.

The decision states an offer by the companies to pay crossing keepers in categories "A" and "B" who were required to work on Whit Monday or August Bank Holiday an additional day's pay instead of granting them leave in lieu (subsequently extended to canal lock keepers employed on a 24-hr. basis) was accepted by the representatives of the union, but after consideration of the arrangement by the annual general meeting of the union, the claim in its present form was presented by the union, and, no settlement having been reached, was eventually referred to the Chairman of the Railway Staff National Tribunal for settlement.

In his decision the chairman stated that after carefully considering the evidence and submissions of the parties he found in favour of the claim.

Revised Scheme of "Settling-In" Grants

The Ministry of Labour & National Service has announced that the changes in production programmes which are taking place involve the transference from where they are living of a number of mobile women, who thus leave employment in which they have gained a certain degree of proficiency for work to which they have to become accustomed. To facilitate this change of environment and work, the Minister has decided to introduce a revised scheme of "settling-in" grants which are payable to women and girls transferred to industrial work beyond daily-travelling distance from their homes. The increased payments will be:—

1st week in new area 25s.
2nd week in new area 20s.
3rd week in new area 15s.
4th week in new area 10s.

These payments will be reduced by 5s. a week if the transferred worker is residing in a Government hostel.

The increased rates came into operation in the week commencing October 11.

Hitherto the amount of the "settling-in" grant has been 24s. 6d. a week, paid after the worker had remained seven nights in the new area, with a supplementary grant of 10s. immediately on transfer.

The "settling-in" grants are paid to mobile women on the railways who are transferred by the Ministry of Labour & National Service from one place to another beyond daily-travelling distance.

COPPER RODS FOR RAILWAY ROLLING STOCK.—The British Standards Institution has issued an addendum slip (P.D. 158) to B.S. 24, part 5, to lay down the dimensional tolerances to which the diameter of material supplied to this specification should comply. Copies can be obtained from the Institution, 28, Victoria Street, S.W.1.

Institution of Locomotive Engineers Luncheon

The Institution of Locomotive Engineers held a luncheon at the Connaught Rooms, Great Queen Street, London, W.C.2, on November 5, at which Mr. O. V. S. Bulleid, President of the Institution, presided.

Mr. Bulleid after the luncheon said that he was sorry that Mr. R. M. Holland-Martin, Chairman of the Southern Railway Company, was unable to be present because of ill-health. Thanks to the Directors, General Manager, and Mr. Raworth, of the Southern Railway, Mr. Raworth's electric locomotive, which was to them on the Southern Railway, an indication as to how an electric locomotive should be built, was standing at Waterloo Station, and he invited those present at the luncheon to inspect it.

Sir William Stanier, Chief Mechanical Engineer, L.M.S.R., said that although Mr. Raworth, the Electrical Engineer, was responsible for the electrical part of the locomotive they were about to see, Mr. Bulleid was responsible for the bogies and so forth. He asked them to rise and drink to the health of Mr. Bulleid.

Among those present were:—

Messrs. N. Ablett, F. W. Abraham, W. A. Agnew, T. J. Aldridge, A. J. Allenby, H. H. Andrews, J. Andrews, S. Appleyard, G. Arnott, W. J. Ash.

Messrs. H. H. C. Barton, T. Barty, Colonel H. U. Bates, Messrs. A. E. Beacham, J. E. Beckett, S. F. Bennett, H. Bissell, P. W. Bollen, R. C. Bond, H. Leslie Boyce, M.P., Major E. A. Bray, R.E., Messrs. J. Briggs, G. C. Brinkworth, E. T. Brook, G. J. Brown, O. V. S. Bulleid (President), M. G. Burrows.

Messrs. J. E. Calverley, A. Campbell, Lt.-Colonel K. Cantlio, Messrs. A. C. Carr, V.D., F. W. Carr, H. R. Carver, W. Challis, Colonel A. B. Chester, Messrs. J. Clayton, M.B.E., J. Chubley Armstrong, C. S. Cocks, T. F. Coleman, Lt.-Colonel F. R. Collins, D.S.O., Messrs. N. H. Cook, B. W. C. Cooke, R. A. Coombe, T. Cooper, Dudley F. Cooper, Sir Ralph Cope, Lt.-Colonel C. G. Cotesworth, Messrs. M. A. Crane, H. W. Crosthwait.

Messrs. A. C. C. Damant, Lt. H. M. Dannatt, R.E., Mr. P. L. Davey, Major-Gen. A. E. Davidson, Messrs. A. L. B. Dawson, Damar Dawson, Lt.-Commander Sir H. T. Dawson, R.N. Messrs. L. F. Day, D. N. Denholm, J. R. Denny, J. P. A. Drewry.

Messrs. W. S. Edwards, C. Hamilton Ellis. Messrs. C. N. Fairchild, H. C. Foster, B. D. Fox, Lt.-Colonel C. J. Francis, C.B.E., Colonel W. S. Fraser, C.I.E.

Mr. H. T. Garvie, Engr.-Commander H. V. Gaud, Messrs. H. F. S. Gedge, W. Gilmour Smith, R. T. Glascoine, J. M. Goring, W. S. Graff-Baker, E. Graham, A. J. Grainger, T. Greenwood, Major H. Gresham, Messrs. J. N. Gresham, S. R. Gresham, P. D. Greville, W. H. Grieve, Brig.-General Griffin, Mr. H. W. Griffiths.

Mr. D. Haig, Sir Martin Hall, Bt., Messrs. R. H. Hamilton-Wickes, J. Hampson, R. F. Hanks, E. W. Hanslip, E. P. Hardy, Captain G. H. Harrison, Messrs. H. A. Harrison, Ronald J. Harvey, C. A. F. Hastlow, C. G. Hatherly, Lt.-Colonel P. D. Hewat, Messrs. F. A. Hewson, H. A. Hicks, F. J. Hills, C. W. C. Hine, R. A. Hobday, C. G. Hodgson, H. Holcroft, Professor E. R. Hondelink, Messrs. W. G. Hornett, F. L. Howard, J. L. Hunter.

Messrs. A. Jenkins, R. T. Jessop, W. S. Johnson, Lloyd Jones, W. Jowett.

Messrs. J. A. Kay, E. H. Keelan, W. Kelway Bamber, G. Kettlewell, H. G. Kerry, A. J. D. Kitson.

Messrs. E. J. Larkin, L. J. Le Clair, H. Lelew, M. Lewis, E. E. Lloyd, L. Lynes.

Messrs. W. H. Maass, D. MacCartney-Filgate, Lt.-Colonel R. S. Macrae, Mr. J. Pelham Maitland, Brig.-General Sir H. O. Mance, K.B.E., Messrs. R. E. Marks, P. E. Marmion, E. W. Marten, F. Mason, Major H. M. E. Mathe, R. E. L. Maunsell, C.B.E., H. G. McClean, R. D. Metcalfe, Stuart Miall, J. W. Milla, Engineer Captain J. W. Milner, C.B.E., Mr. H. H. Morris.

Messrs. G. S. Naylor, R. Needham, G. R. Nicholson.

Mr. J. O'Connor.

Messrs. H. Packham, J. Paczowski, B. W. Palmer, C. E. Parkes, J. J. C. Paterson, C.I.E., R. B. Paul, F. Payne, K. R. Pearson, R. Peets, R. T. Pemberton, R. E. Pennoyer, W. B. Pickering, F. D. Playford, Captain J. Podolski, Messrs. T. Potter, G. Powell-Jones, K. Preston.

Messrs. V. P. Rawlings, A. Raworth, A. A. Richards, H. W. H. Richards, A. Richardson, R. A. Riddles, C.B.E., J. L. Riordan, G. W. Roberts, E. A. Robinson, M.C., M. D. Robinson, J. D. Rogers, Colonel J. A. S. Rolfe, Messrs. G. Rollason, C. E. Rooke, A. P. Ross, Lt.-Colonel H. Rudgard.

Messrs. F. T. Sandford, G. U. Sartoris, H. H. Saunders, O.B.E., M. K. F. Saunders, M.C., E. I. Scott, M.C., G. H. Sheffield, C. Shephard, D. Sheppy, C. Sherrington, G. S. Simmons, Major W. O. Sines, Messrs. S. Sippe, W. O. Skeat, A. H. Sommers, J. E. Spear, Sir William A. Stanier, Messrs. H. J. Stone, C. Stucke, W. B. G. Swayne, H. H. Swift, S. J. Symes.

Lt.-Commander E. Tarleton, R.N., Major E. W. Taylerson, Messrs. F. Theakston, O.B.E., G. Thomas, R. E. Thomas, H. J. Thomson, W. G. Tilling, J. S. Tritton, Lieutenant T. L. J. Tritton, R.E., Messrs. G. Turbett, T. H. Turner, M.W. Tutt.

Messrs. C. B. Unwin, E. Uzzell. Messrs. J. W. Vaughan, J. F. B. Vidal, M.C., Major J. W. Voelcker.

Messrs. C. C. H. Wade, W. J. Wakley, A. L. Wallace, A. J. R. Walter, A. F. Walters, C. Walters, Engineer Captain Waters, Mr. W. L. Watson, C.B.E., Colonel F. Webb, Messrs. H. C. Webb, M. Weiss, F. S. Whalley, M.C., S. I. White, S. T. Wilcox, R. H. Whitelegg, I. Whittingham, J. R. Wilkes, M. Williams, W. C. Williams, H. Wilmot, A. G. Wilson, Colonel G. R. S. Wilson, R.E., Major W. G. Wilson, C.M.G., Messrs. W. G. W. Wilson, A. J. L. Winchester, B. D. Wix, F. R. Wix, H. Wood, J. B. Woodman, W. P. Wrathall, J. M. D. Wrench, C.I.E.

Questions in Parliament

Hackney Downs and Tottenham Railway Service

Mr. Robert Morrison (Tottenham North—Lab.) on October 26 asked the Parliamentary Secretary to the Ministry of War Transport if he was aware that morning and evening railway service between Hackney Downs and Northumberland Park, Tottenham, was inadequate and with results detrimental to the health of elderly men and women employed on war work; and if he would take steps to improve the service.

Mr. P. J. Noel-Baker (Joint Parliamentary Secretary, Ministry of War Transport) wrote in reply: I am not aware that the morning and evening railway service between Hackney Downs and Northumberland Park, Tottenham, is inadequate. There are trains from Hackney Downs each morning at 5.24, 6.40, 7.17, 7.44, 7.56 and 8.33, and trains in the evening at 5.27, 6.16 and 7.37. The journey is one of only 12 or 13 minutes duration, and I am informed that the trains are not overcrowded. If Mr. Morrison has received any specific complaints, I will be happy to have them examined.

Seat Reservation on Railways

Mr. Bartle Bull (Enfield—C.) on November 3 asked the Parliamentary Secretary, Ministry of War Transport whether he would consider adopting one-class fares for all carriages on long-distance trains excepting in special carriages in which numbered, reserved seats could be booked in advance, as was done on railways in the United States of America and other countries.

Mr. Noel-Baker stated in a written answer: I have carefully considered the proposal made by Mr. Bull, but I regret that, like similar proposals which have been made before, their adoption would involve great practical difficulties. The reservation of

seats and the decisions on claims to priority would involve an additional burden on the Ministry and railway personnel which in itself would outweigh any advantage.

Railway Electrification in London Area

Mr. V. L. J. McEntee (Walthamstow West—Lab.) on November 3 asked the Parliamentary Secretary, Ministry of War Transport, whether any plans were being prepared for the electrification of the railway from Liverpool Street to Chingford at any early date after the end of the war; and what extension was proposed beyond Chingford.

Mr. P. J. Noel-Baker (Joint Parliamentary Secretary, Ministry of War Transport): A special committee appointed by the four main-line railways and the London Passenger Transport Board is now considering the electrification of the line to Chingford, and other plans for future railway development in the London area.

Railway Locomotive Workshops

Mr. Rhys Davies (Westhoughton—Lab.) on November 3 asked the Parliamentary Secretary, Ministry of War Transport, whether he was aware that before the outbreak of war the policy of some railway companies was to concentrate the construction and repair of locomotives increasingly on their larger workshops; and if he would take steps while the railways were under Government control to see that post-war planning should not be allowed so to allocate future work as to reduce townships in which the railway companies had hitherto operated to derelict areas.

Mr. Noel-Baker: I am glad to assure Mr. Davies that, in the preparation of post-war plans, the considerations to which he draws attention will not be overlooked.

Mr. Rhys Davies: Will the Parliamentary Secretary bear in mind that when railway companies opened their workshops small townships grew around them and that it would be wise to bear this in mind if the tendencies of the railway companies in peace-time are to be pursued?

Mr. Noel-Baker: I fully realise the importance of Mr. Davies' point.

Mr. Davies: Will the Parliamentary Secretary remember the township of Horwich, Lancashire, in this connection?

There was no reply.

Women Railway Workers

Mr. W. S. Liddall (Lincoln—C.) on November 2 asked the President of the Board of Trade why women railway workers had to give up 12 coupons a year without receiving comparable return in uniform garments; and whether he was now prepared to make them a concession.

Mr. Hugh Dalton (President of the Board of Trade) in a written reply stated: I have already reduced to 8 the number of coupons which uniformed women railway workers have to give up. In return for these coupons, these workers receive coupon-free, on joining the railways, an outfit of uniform worth at least 36 coupons, and they get replacements coupon-free when the garments are worn out.

Transport Advisory Council

Sir Herbert Williams (South Croydon—C.) on October 27 asked the Parliamentary Secretary to the Ministry of War Transport if he could state the date of the last meeting of the Transport Advisory Council created under the provisions of the Road-Rail Act.

Mr. P. J. Noel-Baker: The last meeting of the Transport Advisory Council was held on May 30, 1940.

Sir H. Williams: Can the Parliamentary Secretary say why this statutory body has been put into cold storage instead of performing its appropriate duties?

Mr. Noel-Baker: It was felt that it was a large and numerous body not well adapted for the purposes of war, and its duties are now being performed by the Inland Transport War Council.

Sir H. Williams: But is it not the case that one is a statutory body, has powers, and duties, and that the other is non-statutory and informal? By what right has the Minister superseded a statutory body by a body which has no authority?

Mr. Noel-Baker: I think that this has received the authority of Parliament for three years in the sense that it has not been challenged. If Sir Herbert Williams will put down another question, I will give him another answer.

Sir Herbert Williams (South Croydon—C.) on November 3 asked the Parliamentary Secretary, Ministry of War Transport, if he was in a position to make any further statement as to the meetings of the Transport Advisory Council set up under the provisions of the Road & Rail Traffic Act.

Mr. Noel-Baker stated in a written answer: The Transport Advisory Council consists of about thirty members. It is constituted on a representative basis and in peace time it has given much valuable advice and assistance to the Minister of Transport. It is not a suitable consultative body for the special problems of war. It will be re-assembled when matters arise which can appropriately be referred to it.

Fast Transport Services

Mr. V. L. T. McEntee (Walthamstow West—Lab.) on November 3 asked the Parliamentary Secretary, Ministry of War Transport, if he was aware that many local authorities in the more congested areas in Greater London were determining to reduce this congestion by refusing to issue licences to rebuild houses on some of the bombed sites after the war, thus creating a need for building dwelling-houses beyond the green belt; and what he was doing to provide adequate and fast transport services for such workers at a reasonable cost.

Mr. Noel-Baker: Mr. McEntee may be assured that before schemes are adopted for rehousing in the Outer London area, the population of congested areas in London, there will be consultation between the housing and transport authorities about the provision of the necessary transport.

Road and Rail Traffic

Major A. M. Lyons (Leicester East—C.) on November 3 asked the Parliamentary Secretary, Ministry of War Transport, whether, in view of the changed situation and the extended manufacture of synthetic rubber, some of the necessary road services, both passenger and goods, could be restored; and whether, in the national interest, he could now review the present policy of transfer of traffic to rail.

Mr. Noel-Baker: As the Minister of Labour said on September 23, the Government is anxious to make all practicable improvements in the transport facilities for workers. Arrangements are, therefore, being made to strengthen bus services where the need is urgent, and where the necessary drivers and conductors can be found. Goods vehicles are available, and will be used to relieve the railways, when they are required. But I must warn Major Lyons that, in spite of the present improvement in fuel supplies and the prospect that we may receive some synthetic rubber, it is still necessary to economise in fuel, tyres, vehicles, and manpower, and, therefore, to avoid any unnecessary use of road transport.

Major Lyons: In view of the recent statement made by the proprietor of one of the biggest synthetic rubber plants in America, while in England, will the Parlia-

mentary Secretary take some steps to review the matter?

Mr. Noel-Baker: Yes, but much the greater difficulty is the provision of bus crews and maintenance personnel. The pressure on personnel in the coming winter will be very hard indeed.

Post-War Road Policy

Captain W. F. Strickland (Coventry—C.) on November 4 asked the Parliamentary Secretary, Ministry of War Transport, whether, as the success of all schemes for planning the use of land depended on the provision of adequate road communications and that the position of the roads must be determined before land could be planned satisfactorily for any purpose, he had considered the need for a national road improvement scheme showing the approximate routes of new arterial roads and their connections with existing roads; and was ready to announce such a scheme as the foundation of his national plan for post-war development.

Mr. Noel-Baker stated in a written answer: The Government is at present considering the problems of road policy after the war, and I hope shortly to be able to make a general statement.

Petrol and Tyres

Dr. James Little (Down—C.) on November 4 asked the Minister of Fuel & Power whether, in view of the serious dissatisfaction among private lorry owners in Northern Ireland at the treatment they were receiving he would give them equal treatment in the matter of petrol and tyres with the Northern Ireland Road Transport Board.

Major G. Lloyd George (Minister of Fuel & Power) stated in a written reply: I am in correspondence with the Government of Northern Ireland, and will write to Dr. Little.

March Accident: Coroner's Inquiry

The District Coroner, Mr. J. R. Dawbarn, opened on October 12 his inquiry into the accident on October 11 at Middle Road level crossing, March, when the L.N.E.R. 10.20 p.m. Edinburgh to Colchester express, which had left Peterborough about 7.13 a.m., ran, at about 55 m.p.h. into a motor car, killing three persons and injuring two. There was no derailment. After formal evidence of identification, the Coroner adjourned the inquest until October 22, when Mr. F. C. Scott, solicitor, on behalf of the L.N.E.R., expressed that company's regret and accepted full responsibility. The engine driver said that fog was bad and that he saw nothing wrong; he felt an impact at the crossing and stopped the train. He noticed the crossing gatekeeper holding both arms up. A witness deposed to having seen the car go on the crossing after the gatekeeper had opened the gate, and the collision took place. The gatekeeper said he had come on duty at 7 a.m. He heard a car hoot, and opened the upside gate (the car was at the down), crossed and opened the other gate, and stood listening in the 6-ft. way. He had to jump clear. He shouted, but it was too late. He did not see the collision. He declared that he heard no warning on the hearing bell in the block bell circuit. Visibility was about 12 to 14 yd. Vibration had made him realise that a train was coming. The bell later rang correctly. The proceedings were adjourned to December 29.

Notes and News

Signal & Tablet Inspector Required.

—Applications are invited for a position with the Sudan Railways as signal & tablet inspector. Details are given in our Official Notices, page 495.

Buenos Ayres Great Southern Railway Co. Ltd. Debenture Stocks.—The register of debenture stockholders of the company will be closed from November 12 to 18 inclusive (see Official Notices, page 495).

Gyroscopic Principles and Applications.—At a general meeting of the Institution of Mechanical Engineers on November 19, at 5.30 p.m., the thirtieth Thomas Hawksley Lecture will be delivered by Professor C. E. Inglis, O.B.E., M.A., LL.D., F.R.S., on "Gyroscopic Principles and Applications."

Twist Drills Allocation Centre.—As from November 1, the operations of the Twist Drills Allocation Centre at Sheffield (the establishment of which was referred to in our August 20 issue, page 173) have been extended to include allocations of standard high-speed steel straight-shank jobbers twist-drills, as follows:—

1/2 in. to 1 in. dia. rising by 64ths.
0.5 mm. to 13 mm. dia., rising by 0.25 mm. steps.
Wire gauges sizes, numbers 1 to 80.
Letter sizes, A to Z.
All sizes are inclusive, right-hand cutting and of the two-fluted pattern.

Introduction of Service Charge on G.W.R.—As from November 1, the Great Western Railway followed the procedure introduced by the L.M.S.R. and L.N.E.R. in April, 1940, and adopted the principle of a "service charge" at its Royal Hotel, Paddington, and in the restaurant on No. 1 platform at that station. The "service charge" is about 10 per cent. of a customer's account, excluding the prices of cigars, cigarettes, or tobacco. We understand that there is no intention of extending the arrangement to the company's other hotels, or restaurant cars, at present.

Antofagasta Railway and Chilian Northern.—The Chilian Ministry of Public Works is, according to Reuters, authorised by a Treasury Decree to replace the guarantee given by the Antofagasta (Chili) & Bolivia Railway (under the contract with the State of Chile of 1910 regarding the construction and development of the Chilian Northern Longitudinal Railway) by bonds of 3 per cent. war loan 1955/59. The present guarantee, of nominal amount £50,000, is deposited in bonds of British Government 4 per cent. funding loan 1960/90. The Treasury has accordingly authorised the return to the Antofagasta Railway or its representatives of all the substituted funding loan bonds.

London Passenger Transport Act, 1933, Relaxation Order.—The Minister of War Transport has made the London Passenger Transport Act, 1933 (Relaxation) Order, 1943 (S.R. & O., 1943, No. 1514). The Order, which came into force on October 30, provides that in the application of the proviso to sub-section (1) of section 41 of the London Passenger Transport Act, 1933 (which enables the London Passenger Transport Board to borrow temporarily sums not exceeding at any time a total of three million pounds) no account shall be taken of any sums borrowed by the Board from the Trustees of the Trust Fund set up in respect of the Board's undertaking under Article 19 of the Railway Control Agreement referred to in the Railways Agreement (Powers) Order, 1941, and the said proviso shall accordingly have effect as if after the words "borrowed and

outstanding" there were inserted the words " (excluding any sums borrowed by the Board from the Trustees of the Trust Fund set up in respect of the Board's undertaking under Article 19 of the Railway Control Agreement referred to in the Railways Agreement (Powers) Order, 1941)."

Electrically-Driven Brake Exhausters.—The Metropolitan-Vickers Electrical Co. Ltd. has acquired the effects and goodwill of the Northey-Boyce Rotary Engineering Co. Ltd. Among other engineering products made by this firm is a range of rotary exhausters designed for railway service for use in conjunction with vacuum-brake-equipped electrical rolling-stock.

Southern Railway and "Wings for Victory."—Lord Kindersley, President of the National Savings Movement, has presented the "Wings for Victory" Certificate of Honour to the Southern Railway, which has raised over £800,000. The letter accompanying the certificate asks all concerned to accept it as "a permanent reminder of a great patriotic achievement." Lord Kindersley has written to the General Manager appreciating the publicity given to the campaign in the *Southern Railway Magazine* and the hard work of the company's staff.

Canadian Pacific Railway.—Gross earnings for September, 1943, amounted to \$26,289,000, an increase of \$4,175,000 in comparison with September, 1942. In the working expenses of \$22,504,000 there was an advance of \$3,959,000, leaving net earnings \$216,000 higher at \$3,785,000. Aggregate gross earnings from January 1 to end of September, 1943, amounted to \$216,019,000, an increase of \$28,892,000 in comparison with the same period of 1942, and the aggregate net earnings of \$32,762,000 showed an improvement of \$756,000.

Blue Star Line and Air Powers.—Mr. Justice Bennett will on November 15 hear in the Chancery Division a petition by Blue Star Line Limited for the confirmation of an alteration of the company's objects proposed to be effected by a special resolution passed at an extraordinary general meeting held on August 5. The resolution proposed alterations in the memorandum of association so as to enable the company to establish, maintain, and work air services in any part of the world; to establish, work and lease aerodromes; to manufacture and deal in aeroplanes, etc.; and to acquire holdings in other companies having substantially similar objects.

Post-War Travel from U.S.A.—At the monthly meeting of the Skat Club of Birmingham on November 3, under the Chairmanship of Mr. C. Rayner-Smith, Assistant Divisional Superintendent, Birmingham, Great Western Railway, comments were made by Mr. A. E. Williams, of the American Express Company, on the possible trend and development of post-war passenger traffic from the U.S.A. Although it was realised that other countries, for example, Mexico, and eventually China, would draw Americans on their tourist journeys, there was little doubt that a large number would want to visit Europe. England could be assured of the sympathetic attention of American tourists visiting places which had been devastated. The ensuing discussion developed round the post-war financial situation. American bankers' credits no doubt would be necessary to finance tourist trade from the U.S.A., if it should become great enough to indicate international finance problems; but it was hoped that tourism would be a commodity to barter in exchange for goods and products from

America which would be required by European countries hit more severely by war conditions than the U.S.A.

Great Northern (Ireland) Seats Reservation.—Reservation of seats on the main-line trains between Dublin and Belfast and Londonderry, and in the through coaches Dublin-Londonderry via Portadown will be undertaken by the Great Northern Railway (Ireland) on and from November 15. The charge for reservation will be 1s. a seat (1st, 2nd, or 3rd class), and reservations will be made only in respect of

British and Irish Railway Stocks and Shares

Stocks	Highest 1942	Lowest 1942	Prices	
			Nov. 5, 1943	Rise/ Fall
G.W.R.				
Cons. Ord.	58	39	62	+ 2 1/2
5% Con. Pref.	115 1/2	105 1/2	113	—
5% Red. Pref. (1950) ..	109 1/2	103 1/2	107	—
5% Rt. Charge	133 1/2	123 1/2	127 1/2	+ 1
5% Cons. Guar.	130 1/2	121 1/2	125 1/2	+ 1
4% Deb.	117	105	113	—
4% Deb.	118	108	113 1/2	—
4% Deb.	125	113	117 1/2	—
5% Deb.	137	127	129	+ 1
2 1/2% Deb.	77	70	74 1/2	—
L.M.S.R.				
Ord.	28 1/2	16 1/2	33 1/2	—
4% Pref. (1923)	63 1/2	50 1/2	53 1/2	+ 2
4% Pref. (1955)	76 1/2	67 1/2	77	+ 2
5% Red. Pref. (1955) ..	103 1/2	94 1/2	103 1/2	—
4% Guar.	104 1/2	97 1/2	100	—
4% Deb.	108 1/2	101 1/2	106	—
5% Red. Deb. (1952) ..	111	107 1/2	109 1/2	—
L.N.E.R.				
5% Pref. Ord.	9 1/2	2 1/2	10 1/2	—
Def. Ord.	5	1 1/2	4 1/2	— 1/2
4% First Pref.	62	49 1/2	62 1/2	+ 1 1/2
4% Second Pref.	32 1/2	18 1/2	34 1/2	+ 1 1/2
5% Red. Pref. (1955) ..	95 1/2	79	93 1/2	+ 5
4% First Guar.	98	88	96	—
4% Second Guar.	90	78	83	—
3% Deb.	85	76	83	—
4% Deb.	106 1/2	100 1/2	105	—
5% Red. Deb. (1947) ..	106	103	103	—
4 1/2% Sinking Fund Red. Deb.	106	102 1/2	105 1/2	—
SOUTHERN				
Pref. Ord.	77	61 1/2	79	+ 2
Def. Ord.	23 1/2	14 1/2	25 1/2	—
5% Pref.	112 1/2	104	113	+ 1/2
5% Red. Pref. (1964) ..	110 1/2	105 1/2	111 1/2	—
5% Guar. Pref.	131	121 1/2	123 1/2	—
5% Red. Guar. Pref. (1957)	115 1/2	109 1/2	112 1/2	—
4% Deb.	116	104 1/2	111	—
5% Deb.	134	125 1/2	128	+ 5
4% Red Deb. (1962- 67)	110 1/2	106	107 1/2	—
4% Red. Deb. (1970- 80)	111	106 1/2	108 1/2	—
FORTH BRIDGE				
4% Deb.	109 1/2	108	106	—
4% Guar.	105 1/2	100	103 1/2	—
L.P.T.B.				
4 1/2% "A"	122 1/2	111	116 1/2	—
5% "A"	131 1/2	122	125 1/2	—
3% Guar. (1967-72) ..	95 1/2	97 1/2	98	—
5% "B"	121	111 1/2	116 1/2	—
"C"	56 1/2	38	69	—
MERSEY				
Ord.	27 1/2	20 1/2	32	—
3% Perp. Pref.	61 1/2	56 1/2	65	—
4% Perp. Deb.	102 1/2	99 1/2	103	—
3% Perp. Deb.	80 1/2	76	79	—
IRELAND				
BELFAST & C.D.				
Ord.	9	4	6 1/2	+
G. NORTHERN				
Ord.	29 1/2	12 1/2	22	— 2 1/2
Pref.	—	—	43	— 1
Guar.	—	—	63	— 3 1/2
Deb.	—	—	81	— 1 1/2
G. SOUTHERN				
Ord.	25	10	26	— 3 1/2
Pref.	29	12 1/2	26 1/2	— 3 1/2
Guar.	53	35 1/2	55 1/2	— 1 1/2
Deb.	71 1/2	55 1/2	85 1/2	+ 1 1/2

£ ex-dividend

OFFICIAL NOTICES

Overseas Employment

Buenos Ayres Great Southern Railway Company Limited

THE Directors of the Buenos Ayres Great Southern Railway Company Limited hereby give notice that the Register of Debenture Stockholders of the Company will be closed from Friday the 12th November to Thursday the 18th November, 1943, both days inclusive.

By Order of the Board.

N. F. E. Grey,

Secretary.

SUDAN GOVERNMENT RAILWAYS require the services of a SIGNAL AND TABLET INSPECTOR, preferably unmarried. Candidates should have had workshop and outdoor experience in the maintenance and renewal of signalling installations, Tablet, Telephone and Telegraph instruments. They should also have some knowledge of train control apparatus and be able to prepare signal diagrams, interlocking table and working charts. Candidate, on appointment, will be required to take charge of a district with Sudanese staff under him. He must possess personality and tact and aptitude for control of staff.

Starting rate of pay £E.324-360 per annum (£E.1 = £1 0s. 6d.), according to age and qualifications, biennial

increases in accordance with Government scales, viz., £E.324-360-396-432-480-540-600. Successful candidate will be appointed on probationary contract for five years and subscribe to the Provident Fund after which, if not accepted to pension, he will be paid a bonus equivalent to 20 per cent. of the pay drawn between the date of his retirement and the completion of two years' service. Free passage on appointment. Strict medical examination. At present there is no income tax in the Sudan.

Written applications (no interviews) giving full details of age, registration numbers, qualifications, experience and name and address of present employers, should be sent to The Secretary, Overseas Manpower Committee (Ref. 957), Ministry of Labour and National Service, Alexandra House, Kingsway, London, W.C.2.

a journey or journeys, as above, commencing at Dublin, Belfast, or Londonderry. Applications for reserved seats should be made at: Enquiry Office, Amiens Street Station, Dublin; G.N.R. City Office, 2, Lower O'Connell Street, Dublin; Booking Office, Great Victoria Street Station, Belfast; and Stationmaster's Office, Foyle Road Station, Londonderry. Such applications cannot be accepted earlier than one week before the day of travel, or later than 4 hours before the advertised time of departure of the train.

L.M.S.R. Locomotive "Malta" Renamed "Malta G.C."—At Euston on November 4, Lt.-General Sir William Dobbie, G.C.M.G., K.C.B., D.S.O., accompanied by Lady Dobbie, renamed the L.M.S.R. 4-6-0 "5XP" class locomotive No. 5616 *Malta* as *Malta G.C.*, as a tribute to the people of that island. Sir Thomas Royden, Chairman of the London Midland & Scottish Railway Company, welcomed Sir William Dobbie, and on the footplate were Driver John N. Gregory, a Military Medallist of the war of 1914-19, and Fireman Charles Russell, who was in the Dunkirk evacuation. Others present included Mr. G. L. Darbyshire, Vice-President, Mr. T. W. Royle, Chief Operating Manager, Mr. C. E. Fairburn, Acting Chief Mechanical Engineer & Electrical Engineer, and Mr. G. H. Loftus Allen, Advertising & Publicity Officer, London Midland & Scottish Railway; Flight-Lieutenant Lardner Burke,

D.F.C., who was the pilot of a "Spitfire" during the siege of Malta; and Lt.-Colonel Agius, M.C., T.D., Trade Commissioner for Malta in London. In the course of his speech, Sir William Dobbie said that there was still much to be done in winning the war, and that there was scope for the railways to continue making their great contribution to that end. The suggestion that the engine be renamed *Malta G.C.* was made by Mr. Lionel Gamlin, of the B.B.C., as the result of a chance view of the locomotive from a station platform.

Institution of Civil Engineers Programme.—Ordinary meetings of the Institution of Civil Engineers to be held during the first half of the session 1943-44 will include one on November 23 next, when Mr. B. D. Richards, B.Sc. (Eng.) will read a paper on "Post-War Transport in Great Britain" (5 p.m.); and one on February 22, 1944, when Mr. V. A. M. Robertson, M.C., C.B.E., Engineer-in-Chief, L.P.T.B., will read a paper on "The Engineering Evolution of London Transport" (5.30 p.m.). On December 14 next, at 5 p.m., Lt.-Colonel S. A. McMillion, U.S.A. Army, will give a lecture to the Road Engineering Division on "The Alcan Highway." In the Railway Engineering Division, papers will be read on December 7 next by Mr. H. R. Reynolds, on "Soil Mechanics and the Railway Engineer," and by Mr. M. F. Barbey, on "Some Soil Mechanics Problems on the L.M.S.R." (5 p.m.); and films will be shown on

February 15, 1944, commencing at 5.30 p.m., illustrating various aspects of railway engineering construction.

Railway Freight Rebates.—The Railway Rates Tribunal will sit at 10.30 a.m. on November 23 at its office, Wellington House, 125-130, Strand, London, to review the operation of the Railway Freight Rebates Scheme for the year ended September 30, 1943. The railway companies have filed with the Tribunal an application, which will be heard at the same time and place, that there shall be paid out of the Railway Rebates Fund in respect of administrative expenses for the period from October 1, 1943, to September 30, 1944, a sum equal to one half of one per cent. of the aggregate estimated rate relief of the companies for that period. This sum would be exclusive of any payment out of the fund authorised under sub-section (3) section 2 of the Railway Freight Rebates Act, 1936. Notices of appearances and objections must be filed with the Registrar on or before November 19.

Contracts and Tenders

Below is given a list of orders placed recently by the Egyptian State Railways:—

Morgan Crucible Co. Ltd.: Crucibles, carbon brushes.
Stewarts and Lloyds Limited: Tubes.
Bullers Limited: Line materials.
Consolidated Pneumatic Tool Co. Ltd.: Tube expanders.
Buck & Hickman Limited: Vices, punches.
Small & Parkes Limited: Discs.
Arthur Balfour & Co. Ltd.: Screwing and cutting tools.
Yorkshire Copper Works Limited: Brass pipes.
Ericsson Telephones Limited: Switch knobs, telephone and telegraphic materials.
Siemens Bros. & Co. Ltd.: Relay coils.
Midland Electric Manufacturing Co. Ltd.: Fuses.
P. & W. MacLellan Limited: Mild-steel sections, angles.
Steel, Peech & Tozer Branch of the United Steel Cos. Ltd.: Bars, flat spring-steel.
Marconi's Wireless Telegraph Co. Ltd.: Valves.
Lovick Johnson Company: Metallizing wires.
Lewis Berger & Sons Ltd.: Celluloid paints.
Alfred Herbert Limited: Texopes.
R. A. Lister & Co. Ltd.: Wireless spare parts.
Dubilier Condenser Co. (1925) Ltd.: Condensers.
Grimshaw, Baxter & J. J. Elliott Limited: Clocks.
Caprotti Valve Gears Limited: Caprotti valve gears.
Edison Swan Electric Co. Ltd.: Switchboard lamps.
Siemens Electric Lamp & Supplies Limited: Lamps.
Thomas Turton & Sons Ltd.: Helical draw-bar springs.
Standard Telephones & Cables Limited: Relays.
Tuck & Co. Ltd.: Asbestos.
General Electric Co. Ltd.: Insulating materials, tubular lamps.



Sir Thomas Royden, Chairman of the London Midland & Scottish Railway Company, speaking in connection with the locomotive renaming ceremony at Euston on November 4. Left to right: Lt.-Colonel Agius, M.C., Trade Commissioner for Malta in London; Flight-Lieutenant Lardner Burke, D.F.C.; Lt.-General Sir William Dobbie, D.S.O., who performed the ceremony; Sir Thomas Royden; Lady Dobbie; and Lady Royden

Railway Stock Market

The continuance of dull and inactive conditions in Stock Exchange markets resulted in a further downward movement of values in most securities. British Funds lost their recent firmness, and sharp declines were recorded among industrial shares, sentiment as to which was governed mainly by uncertainties as to the post-war period; and this tendency appeared to be accentuated by the excellent trend of the war news. Nevertheless, there was again no heavy selling, and the lower trend of values continued to be attributed mainly to the small demand experienced. Home railway stocks were unable to continue to move against the surrounding market trend.

Nevertheless, although best prices recorded recently were not held, most junior stocks have been maintained well on balance, and in the case of higher-yielding preference stocks of the L.N.E.R. and L.M.S.R. further gains have been shown as compared with a week ago. Despite the recent general improvement in securities of the main-line railways, no heavy selling has developed, no doubt because of the increased confidence as to the post-war position which has resulted from Lord Leathers' recent speech. The market remains confident that dividends for the current year will be at around the same levels as for 1942, and in no instance is a reduction considered likely. Indeed, there is now talk of a possibility of fractionally better payments on L.M.S.R. ordinary and L.N.E.R. second preference, although it is recognised that this will

probably turn on revenue from ancillary services, which is not covered by the rental agreement. There is now widespread realisation that under the latter, dividends at last year's rates can be considered as being virtually guaranteed by the Government until there is final agreement on the problem of post-war transport co-ordination and control. There is not so widespread a recognition, however, of the probability that there is no other group of companies, industrial or otherwise, whose dividend position, both now and in the immediate post-war period, is so clearly defined as in the case of the railways. It would certainly appear that, having regard to the attractive yields still offered, home railway stocks will have reasonable scope for further good appreciation in value, although this may have to wait until there is a return of activity to Stock Exchange markets. Indeed, home railway stocks offer attractions, both as to income and possible good appreciation in price.

Compared with a week ago, Great Western ordinary was unchanged on balance at 62, but 62½ was touched at one time. Great Western 5 per cent. preference showed a fractional gain to 113½; the guaranteed stock moved up a point to 125½, and the 4 per cent. debentures were maintained at 112½. On the other hand, at the time of writing, L.M.S.R. ordinary has reacted to 32½, compared with 33½ a week ago; but the senior preference rose from 75½ to 76½, and the 1923 preference from 62½ to 63½, and the guaranteed stock

was again at par, and the 4 per cent. debentures 106. Among L.N.E.R. stocks, the second preference reacted to 34, a decline of a point on balance; the first preference was higher at 62½, compared with 62½, but has continued to be quoted at a slightly lower level than L.M.S.R. 1923 preference. Elsewhere, L.N.E.R. first guaranteed was 96, and the second guaranteed was 88, as against 88½ a week ago. Southern deferred, which was 25½ a week ago, has showed a reaction to 24½ at the time of writing; on the other hand, the preferred recorded a further rise from 78½ to 78½. Southern 4 per cent. debentures made a fractional gain to 111, as did the 5 per cent. preference at 113. In other directions, London Transport "C" showed steadiness at 68½ and was the same as a week ago.

Movements in Argentine railway securities were mostly small, an undertone of caution having ruled because of the imminence of the annual reports and a disposition to await further indications of the attitude of the Argentine Government. B.A. Gt. Southern 5 per cent. preference was 28, or within half-a-point of the level of a week ago, Central Argentine 4½ per cent. preference 21, and B.A. Western 4½ per cent. preference 28½. In other directions, United of Havana debentures moved back from 34½ to 32½, and Leopoldina debentures from 57 to 56. San Paulo ordinary was a point down at 60, and Antofagasta preference 46. French railway sterling bonds became reactionary. Canadian Pacific Railway stocks were 15½, compared with 16 only a week ago.

Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open	Week ending	Traffic for week		No. of Weeks	Aggregate traffic to date			Shares or stock	Prices			
			Total this year	Inc. or dec. compared with 1941/2		Totals		Increase or decrease		Highest 1942	Lowest 1942	Nov. 5, 1943	Yield % (See Note)
						1942/3	1941/2						
South & Central America													
Antofagasta (Chili) & Bolivia	834	31.10.43	£ 34 500	+ £ 7,350	44	£ 1,244,400	938,620	+ £ 305,580	Ord. Stk.	14	7½	14	Nil
Argentine North Eastern	753	30.10.43	14 226	+ 1,584	18	246,198	242,142	+ 4,056	6 p.c. Deb.	6½	3	7	Nil
Bolivar	174	Oct., 1943	5,144	- 1,266	44	52,813	47,139	+ 5,674	Bonds	19½	10	21½	Nil
Brazil	...	...	...	...	...	...	...	...	Ord. Stk.	20½	9	21	Nil
Buenos Ayres & Pacific	2,807	31.10.43	106,820	+ 18,920	18	1,582,200	1,529,900	+ 52,260	Ord. Stk.	7½	4	7½	Nil
Buenos Ayres Great Southern	5,030	30.10.43	184,980	+ 13,440	18	2,608,620	2,385,740	+ 222,880	Ord. Stk.	12½	7½	15	Nil
Buenos Ayres Western	1,930	30.10.43	48,840	- 12,840	18	875,220	889,500	- 14,280	"	12½	6½	13	Nil
Central Argentine	3,700	30.10.43	151,827	+ 26,793	18	2,347,479	2,179,851	+ 167,628	"	9½	4½	9	Nil
Do.	...	...	...	...	...	...	...	...	Dtd.	3½	2½	4	Nil
Cent. Uruguay of M. Video	972	30.10.43	35,266	+ 9,639	18	544,178	377,559	+ 166,619	Ord. Stk.	8	4	6½	Nil
Costa Rica	262	Sep., 1943	23,127	+ 11,571	13	72,034	38,244	+ 33,790	"	16½	11	15	Nil
Dorada	70	Sep., 1943	24,660	+ 5,360	39	196,807	137,705	+ 59,102	1 Mt. Db.	90½	89	95½	6½
Entre Rios	806	30.10.43	20,340	+ 1,578	18	349,500	326,334	+ 23,166	Ord. Stk.	33	4½	7	Nil
Great Western of Brazil	1,030	30.10.43	21,530	+ 3,040	44	69,930	472,100	+ 226,810	Ord. Sh.	9½	9½	32/6	Nil
International of Cl. Amer.	794	Sep., 1943	\$186,745	+ \$162,172	36	\$5,512,281	\$4,633,303	+ \$878,978	"	—	—	—	—
Interoceanic of Mexico	...	...	...	...	...	...	...	...	1st Pref.	1½	5/3	2	Nil
La Guaira & Caracas	22½	Oct., 1943	6,900	- 1,670	44	83,360	71,525	+ 11,435	5 p.c. Deb.	11½	5	86½	Nil
Leopoldina	1,918	30.10.43	38,643	+ 2,063	44	1,490,993	1,308,230	+ 170,763	Ord. Stk.	6½	3½	6½	Nil
Mexican	483	31.10.43	ps. 538,100	+ ps. 68,100	18	ps. 6,954,900	ps. 5,045,900	+ ps. 1,909,000	Ord. Stk.	1	1	1½	Nil
Midland Uruguay	319	Aug., 1943	14,706	+ 4,213	41	31,160	23,107	+ 8,053	"	—	—	—	—
Nitrate	382	31.10.43	7,056	- 6,083	44	128,695	144,010	- 15,315	Ord. Sh.	77½	3½	76/3	Nil
Paraguay Central	274	29.10.43	\$4,411,000	+ \$209,000	18	\$94,459,000	\$66,500,000	+ \$27,959,000	Pr. Li. Stk.	53	40	70	8½
Peruvian Corporation	1,059	Oct., 1943	102,818	+ 17,072	18	417,026	336,588	+ 80,038	Pref.	19½	5½	14	Nil
Salvador	100	Aug., 1943	c 91,000	+ c 42,000	9	c 199,000	c 18,000	+ c 71,000	Ord. Stk.	59	41	61½	3½
San Paulo	160	24.10.43	50,794	+ 7,036	43	1,865,225	1,587,398	+ 277,828	Ord. Sh.	41½	23½	27½	Nil
Taltal	160	Sep., 1943	7,175	+ 2,240	13	16,905	16,600	+ 245	Ord. Stk.	8½	2½	5	Nil
United of Havana	1,301	30.10.43	39,917	+ 5,815	18	843,166	715,656	+ 127,510	Ord. Sh.	8½	2½	5	Nil
Uruguay Northern	73	Aug., 1943	1,451	+ 395	9	2,838	2,193	+ 640	"	—	—	—	—
Canada													
Canadian Pacific	17,034	31.10.43	1,692,400	+ 179,200	44	48,472,600	41,985,200	+ 6,487,400	Ord. Stk.	16½	9½	15½	Nil
India													
Barsi Light	202	Aug., 1943	15,285	+ 2,003	22	107,055	76,587	+ 30,468	"	—	—	—	—
Bengal-Nagpur	3,267	July, 1943	955,725	+ 17,325	17	4,184,625	3,553,425	+ 631,200	Ord. Stk.	102½	88	102½	38½
Madras & Southern Mahratta	2,939	10.8.43	256,725	+ 5,949	19	3,588,488	3,028,997	+ 559,491	"	105½	87	108½	4½
South Indian	2,349	31.7.43	214,758	+ 14,571	17	2,434,301	2,255,090	+ 179,211	"	103½	98½	103½	4½
Various													
Egyptian Delta	...	30.9.43	13,971	+ 2,879	27	257,924	197,607	+ 60,317	Prf. Sh.	5½	1½	2½	Nil
Manila	...	...	...	...	...	...	...	...	B. Deb.	44	35	40	8½
Midland of W. Australia	277	Aug., 1943	36,199	+ 7,460	9	70,424	56,608	+ 13,816	Inc. Deb.	95	90	100	6
Nigerian	1,900	31.7.43	63,520	+ 7,084	17	1,130,531	980,707	+ 149,824	"	—	—	—	—
South Africa	13,291	2.10.43	851,417	+ 61,474	27	22,232,795	20,514,452	+ 1,718,343	"	—	—	—	—
Victoria	4,774	May, 1943	1,432,673	+ 67,979	—	—	—	—	"	—	—	—	—

Note. Yields are based on the approximate current prices and are within a fraction of ½

† Receipts are calculated @ 1s. 6d. to the rupee

Argentine traffics are given in sterling calculated @ 16½ pesos to the £
\$ ex dividend